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THE INFL CONSTITUENT IN THE MUNDANI LANGUAGE

by

Elizabeth Ann Magba

A Thesis

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ABSTRACT

The thesis is a syntactic study of the Inflectional constituent (INFL) in Mundani, a Grassfields Bantu language of the Mbam-Nkam subgroup, spoken in the S.W. Province of the Republic of Cameroon.

Chapter 1 briefly introduces the Mundani language and people; chapter 2 summarizes relevant aspects of the modular system of Universal Grammar known as Government and Binding (GB) theory that forms the basic theoretical framework of the study.

In order to place the INFL constituent within its wider syntactic context, chapters 3 and 4 outline Mundani clause structure, including interrogatives, negation, and interesting deviations from basic SVO word order in Topic and Focus constructions.

The INFL constituent itself is introduced in chapter 5, with two possibilities for syntactic analysis: (i) as a single split constituent; (ii) as two separate syntactic categories: TENSE projecting to TP, and AGR projecting to AgrP. The evidence favours the second approach, which is adopted as a basis for discussion.

Chapters 6 and 7 detail the content and syntactic properties of the category TENSE, including the licensing of nodes in complex TENSE constituents composed of several elements; the content and syntax of the category AGR are dealt with in chapters 8 and 9. In the case of AGR, two distinct approaches can be adopted: one based on a GB account of Switch Reference (SR) languages; the other in terms of Control Theory. Although the latter offers a more satisfactory account of AGR in this instance, the fact that *both* approaches can be applied to the Mundani data provides insights into the parallelisms between SR and Control: notably, the binding relationships between two INFL components, the links existing between INFL, its Spec (subject) position and COMP, and the obligatory subject control resulting from these relationships.

The concluding chapter 10 summarizes evidence to show that INFL is not a single functional category, but rather a complex of different kinds of functional category, each of which forms the head X of its own XP projection. Two problems remain partially unresolved. Firstly, there are difficulties in accounting satisfactorily for the "spread" of imperfective marking across "complex TENSE" and a following main verb. Secondly, the proposed analysis of Mundani INFL is an obstacle to a coherent account of realis/irrealis modal marking, which falls under either TENSE or AGR across three different construction types.

CONTENTS

CHAPTER 8 - THE CATEGORY AGR: CONTENT AND DISTRIBUTION

CHAPTER 9 - THE CATEGORY AGR: SYNTAX

ABBREVIATIONS

ACC	accusative case
Adv	adverbial
AdvP	adverbial phrase
AM	associative marker
AsP	aspectual phrase
ATB	across the board
c1,c2..	noun class 1, 2...
CFACT	counterfactual
C(OMP)	complementizer
CON	concessive
COND	conditional
CP	complementizer phrase
D	determiner
DAT	dative case
DEF	definitizer
DEM	demonstrative
DP	determiner phrase
DS	different subject
ds	dummy subject
ECP	empty category principle
EMPH	emphatic
EQ	emphatic question
F	General Future
F1	Today Future
F2	Tomorrow Future
F3	After Tomorrow Future
FOC	focus
GEN	genitive
HYP	hypothetical
IMP	imperfective
IMPER	imperative
INC	incompletive
INDEF	indefinite
I(NFL)	inflection
IP	inflectional phrase
IR	irrealis
LOC	locative
LOG	logophoric
NARR	narrative
NEG	negative
NP	nominal phrase
O	object
OBL	obligational
P	General Past
P1	Today Past
P2	Yesterday Past
P3	Before Yesterday Past
p.c.	personal communication
PF	perfective
PL	plural
POS	positive
PP	prepositional phrase
PROG	progressive
Q	question
R	realis
REF	reflexive
REL	relative clause
S	subject
SG	singular
SR	switch reference
SS	same subject
SUB	subordinator
TAM	tense-aspect-modal
TOP	topic
V	verb
VP	verb phrase

ORTHOGRAPHY

The alphabet used to write the Mundani language throughout this text conforms to the General Alphabet of Cameroon Languages, adopted by the National Committee for the unification and harmonization of the alphabets of Cameroon languages on 9 March 1979, in Yaoundé. The letters of the alphabet are listed below with their phonetic equivalents (including variants), and examples.

A	a	[æ]	àka	*foot*
		[a]	membaŋ	*red*
Ạ	ạ	[ã]	m̀bạ̀	*man*
B	b	[b]	àbu	*hand*
D	d	[d]	dù	*go away!*
Dz	dz	[dz]	adzì	*stream*
		[dʒ]	ǹdzǔ	*debt*
E	e	[e]	ke	*raffia palm*
		[ɛ]	àben	*dance*
Ẹ	ẹ	[ãi]	m̀bẹ̀	*farm*
Ə	ə	[ə]	abə	*dog*
F	f	[f]	fì	*latrine*
G	g	[g]	gùb	*skin*
Gb	gb	[gbʷ]	kègbèlè	*feather*
Gh	gh	[ɣ]	gha	*go!*
I	i	[i]	èti	*stone*
		[ɨ]	èsi	*face*
Ɨ	ɨ	[ɯ]	fɨŋ	*wound*
Ɨ̰	ɨ̰	[ɯ̃]	tɨ̰	*stand!*
K	k	[k]	kɔ	*take!*
Kp	kp	[kpʷ]	kpèn	*back*
’	’	[ʔ]	kɨ ’ɨ	*come!*
Ḷ	l	[l̃]	le	*fly!*
M	m	[m]	mèleb	*water*
N	n	[n]	nɨ̰	*big*
Ny	ny	[ɲ]	nyi	*cutlass*
Ŋ	ŋ	[ŋ]	ŋa	*give!*
Ŋm	ŋm	[ŋmʷ]	ŋmata	*take a handful!*
O	o	[o]	fo	*air*
Ọ	ọ	[ð]	tọ	*clearing*
Ɔ	ɔ	[ɔ]	ǹdɔŋ	*cup*

Ɔ	ɔ	[ɔ̃]	fɔ̀	*chief*
P	p	[p]	paŋe	*keep!*
Pf	pf	[pf]	àpfə	*compound*
S	s	[s]	si	*ground*
		[ʃ]	su	*say!*
T	t	[t]	tem	*shoot!*
Ts	ts	[ts]	àtsə	*head*
		[tʃ]	tsu	*come down!*
U	u	[u]	nu	*drink!*
Ụ	ụ	[ũ]	èbụ	*egg*
V	v	[v]	vi	*pick it up!*
W	w	[w]	wòt	*person*
Y	y	[y]	ye	*see!*
Z	z	[z]	zə	*listen!*

Notes

1. The consonant pairs **p/pf**, **v/w** and **y/z** are variants of the phonemes **/p/**, **/w/** and **/y/** respectively; but since they are generally perceived by speakers to be separate sounds (perhaps under the influence of English, at least in the case of **v/w** and **y/z**), the distinction between them is maintained in the orthography.

2. Lengthened vowels are doubled as in: **luula**, *run!*; **bɨɨne**, *reply!*

3. There are four level tones and two compound tones in Mundani, as follows:

◌́	high	◌̌	rising
◌̄	mid	◌̂	falling
◌̀	low		
◌̏	extra low		

In the text, low, rising and falling tones are marked. High or mid tones are marked only where it is wished to draw particular attention to them; extra low tone is not marked. Contrary to normal orthographic conventions in Mundani, tone on syllabic nasal consonants is indicated in order to emphasize their syllabic status.

ACKNOWLEDGEMENTS

This study is in one sense a collective effort, since the contributions of so many people have made it possible.

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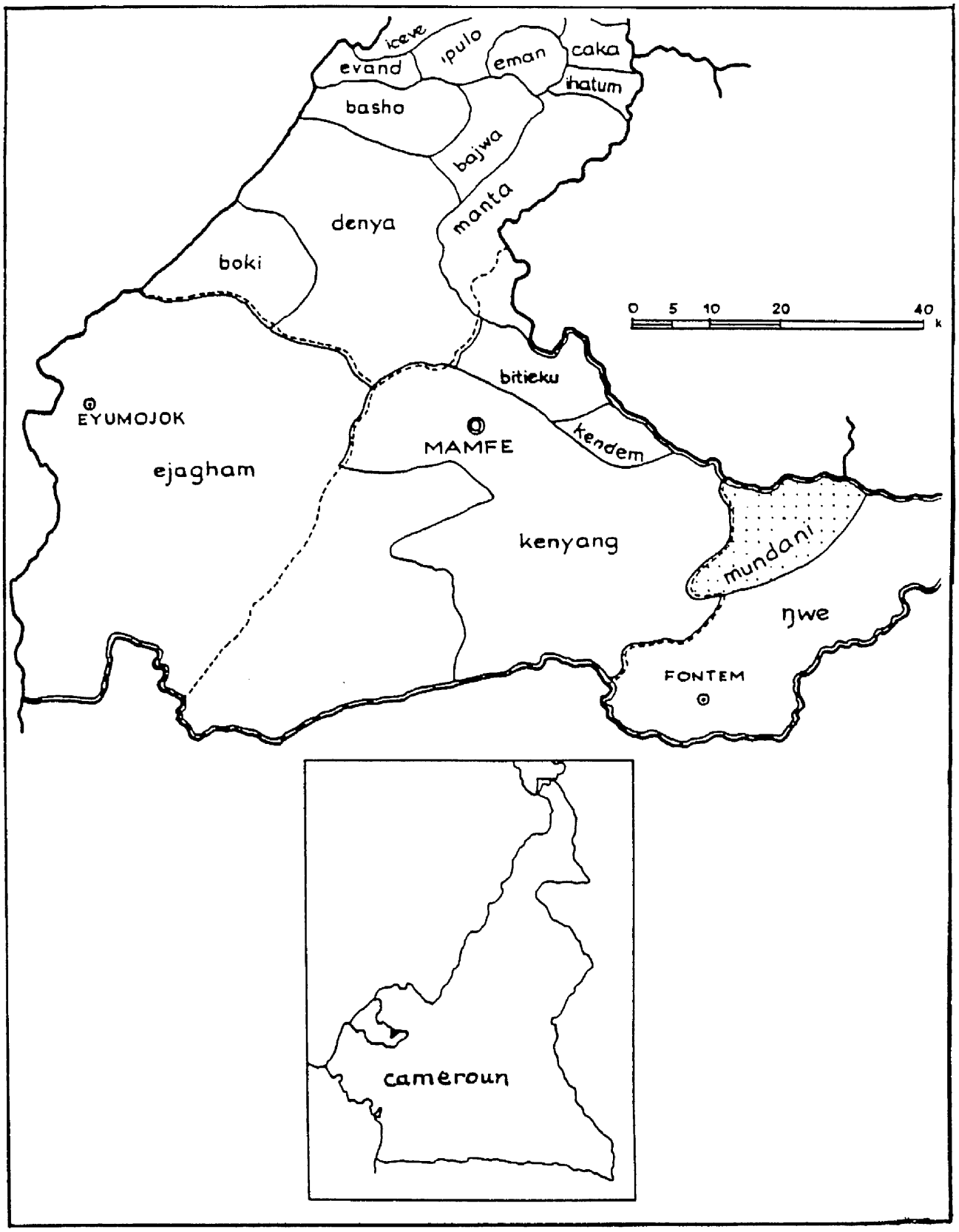
All errors in data, interpretations and analyses are, of course, entirely mine.



GEOGRAPHICAL POSITION
OF THE MUNDANI AREA

CHAPTER 1 - INTRODUCTION

1.1 Geographical Area

The Mundani language is spoken in the west of the Republic of Cameroon. Formerly the area was located for administrative purposes in the Fontem Subdivision of the Manyu Division of South-West Province; but it was recently accorded its own subdivision under Manyu, with subdivisional headquarters at Wabahne (pronounced Waba'ne).

The Mundani people constitute one of the clans within the Widikum group; other clans include Moghamo, Ngemba, Menemo, Ngie and Ngwaw (Ngwa 1978:121). The Widikum live in a transitional zone between the tropical rainforest to the south and the savannah to the north, occupying the south and south-west of the region known as the Bamenda Grassland.

The majority of Mundani-speaking people live in what is referred to as Upper Mundani - a region of steep-sided valleys and high mountains rising to over 2,000 metres, which form the western edge of the Bamboutos range. There is also a smaller section of the population settled in an area of low-lying rainforest to the west of the mountains, which forms a part of the Mamfe Basin, and which is referred to as Lower Mundani. The two areas are separated dramatically from each other by a steep escarpment. The river Meyi has its source in the mountains on the eastern side of Upper Mundani, and flows west across the region towards the Mamfe Basin, where it eventually joins a tributary of the Manyu river.

The rugged terrain makes the region difficult of access, and up to now no roads have penetrated it successfully; but there are several laterite roads or tracks which are normally motorable in the dry season, and which provide exit points for Dschang, Bamenda and Mamfe.

1.2 The People

The Mundani population in the language area itself is currently estimated at around 30,000, of whom some 22,000 inhabit the chieftaincy of Bamumbu in the Upper Mundani area, while the remainder live in the forest area of Lower Mundani. The latter group is divided into seven autonomous villages: Bechati, Folepi, Banti, Igumbo, Besali, Bangang and Nkong.

From a linguistic point of view, Upper Mundani is relatively homogeneous, with the exception of the Fotang Quarter on the south-east perimeter, where M'mock, a dialect of Yemba (Dschang) is spoken, but Mundani is readily understood. According to local historians, this quarter was captured from the Yemba people in war. In Lower Mundani, the linguistic map is more complex. For example, the population of Igumbo is mostly bilingual in Mundani and Moghamo. In Besali, Bangang and Nkong, the mother tongue has been identified as a dialect of Kenyang and is thus distinct from Mundani; however, the inhabitants of these villages generally understand the Mundani language without difficulty, and, for historical reasons having to do with common ancestry, insist that they are Mundani people. In view of this linguistic complexity, it is difficult to calculate the number of people across the region who speak Mundani as a mother tongue.

In the past two to three decades, there has been a movement of substantial numbers of Mundani people out of their home area towards centres of employment: the plantations of the Cameroon Development Corporation in the Fako Division of South-West Province; the coffee farms of Western Province and around Foumbot; major urban centres such as Douala, Limbe, Tiko, Kumba, Nkongsamba, Bamenda and Yaoundé. We have no statistical data concerning these groups, but can surmise that there are between 10,000 and 15,000 people in such "displaced" communities.

The mother tongue is kept alive in migrant groups, especially where numbers of people live together in villages or urban quarters, and where vigorous Mundani "cultural associations" exist. However, some children are growing up speaking Cameroon Pidgin as their first language, and in such cases their control of Mundani may be limited.

1.3 Social and Economic Life

The majority of the population in the home area depend on subsistence agriculture for their livelihood. Women are responsible for the bulk of the food production: cocoyams, maize, beans, bananas and plantains are amongst their staple products, although the range of altitudes and climatic conditions makes it possible to produce a considerable variety of crops. The men clear the land for

cultivation, tap wine from raffia palms, maintain the plantations of oil palms and manufacture palm oil for marketing, and produce other cash crops such as coffee, kolanuts and garlic. The men are also responsible for livestock such as pigs and goats, and for hunting game. Important markets on the edge of the Mundani area, eg. at Fotang and Bechati, provide outlets for cash crops and the small surplus from subsistence farming.

The basic economic unit is the polygamous family, and each compound houses a single family unit. In the Bamumbu chieftaincy, the "village" is composed of rather scattered compounds and farm plots, grouped for administrative purposes into "quarters". Each quarter is placed under the leadership of a **ŋkĕm**, *noble*, who is responsible to the **fɔ̀nto'**, *subchief*, who in turn is responsible to the **Fɔ̀**, *Paramount Chief*, known as *Fon* throughout the Bamenda Grassfield region. The role of Fon is hereditary: a Fon is always succeeded by one of his sons (not necessarily the eldest), who is selected by his father in consultation with a group of elders known as the "seven king-makers". The present Fon of Bamumbu is Lekunze III. There is a rich system of beliefs, traditions and ceremonial surrounding the Fon and his royal household.

In Lower Mundani, the relatively level land has made it possible to group compounds more closely together, forming seven distinct villages, each with its chief (Fon), subchiefs and nobles. The village of Bechati tends to dominate the area, both for historical reasons and because of its larger population and important market.

The rugged terrain and lack of infrastructures have cut off the Mundani people from extensive contact with the outside world. It is perhaps because of this relative isolation that the hierarchical structure of Mundani society and its traditions have been remarkably well preserved.

Nevertheless, the region is increasingly affected by the rural exodus (see 1.2 above). Young people seeking secondary or higher education have been obliged to leave home, although the establishment of the first secondary school in the area in 1990/91 may cause the "education exodus" to slow down a little. Others have left to seek employment in the plantations of the south-west or in urban areas, or to work as coffee farmers in Western

Province and around Foumbot. These young migrants usually marry within their ethnic group, form identifiable Mundani communities wherever they settle, maintain their language and traditions through "cultural associations", and often retain strong links with, and interest in, their home area. However, up to now, few have returned to live there long-term.

1.4 Language

The name "Mundani" derives from the expression **mâ ǹdà' nê**, meaning *I say that...* in the dialect of Lower Mundani (Bechati, Folepi, Igumbo and Banti villages). The anglicized version of this expression, "Mundani", is used to refer to both the people and their language, both by outsiders and by Mundani speakers themselves. To designate the variety of the language spoken in a particular village or village quarter, speakers often use the name of the village or quarter concerned: they may say, for example, **tàà ǹdà'à Mbà'**, *he speaks Bambumbu*, or **tàà ǹdà'à Lebî**, *he speaks Folepi*.

The language belongs to the Grassfields Bantu cluster of languages, Momo subgroup, according to the classification of *L'Atlas linguistique du Cameroun* (Dieu and Renaud, 1983). There are three major dialects:

(i) -the dialect of the Fomenji and Fonenge quarters of the Bamumbu chieftaincy, referred to as the FF dialect;
(ii) -the central dialect of Bamumbu, referred to as the NCH (Nchingang) dialect, from the Nchingang quarter where the Fon's palace is situated;
(iii)-the Lower Mundani dialect, referred to as the LM dialect.

Speakers of the FF and LM dialects have occasional difficulties in understanding each other, while the NCH dialect is understood across the entire region, and tends to have more prestige attached to it in that it is the dialect of the Fon's quarter. The NCH dialect has therefore been adopted as the reference dialect for the purposes of research and literacy, and it is the dialect on which this study is based.

English is the official medium of instruction in Mundani schools; but in reality it is mastered by only a very small educated elite and by a few people who have spent long periods outside their home area. Cameroon Pidgin is used to a limited degree by the men and a few women, for trading at large markets on the edge of the region, and for communicating with the small number of government officials, school teachers and pastors of churches from outside the area. Displaced Mundani communities are obliged to use Pidgin, and sometimes English or French, for daily contacts at school, college, office or market; but Mundani predominates in their homes and at meetings of their "cultural associations".

Neighbouring languages to Mundani are Ngemba to the east, Moghamo to the north, Bayangi (Kenyang) to the west, ŋwe (Bangwa) to the south, and Yemba (Dschang) to the south-east. Bilingualism in Mundani and a neighbouring language tends to depend on inter-marriage: for example, in Igumbo, many married women are from surrounding Moghamo villages, so their children grow up bilingual in Moghamo and Mundani. In other peripheral areas such as Fotang and Besali, bilingualism is less developed: many inhabitants understand Mundani without being able to speak it fluently.

1.5 Existing Studies

The writer's study of the Mundani language began in 1978 (under the name Elizabeth Parker). Before this date, no linguistic research had been undertaken. However, work on other languages of the Grassfields Bantu cluster have been consulted extensively, notably that produced by the Grassfields Bantu Working Group (eg. Hyman 1971 and 1980; Leroy 1982; Stallcup 1980; Voorhoeve 1976) and by the Société Internationale de Linguistique (eg. Anderson 1980, 1983; Mfonyam 1988; Schaub 1985; Spreda 1986).

The following studies of Mundani have been carried out in the period 1978-1995:

ANNETT, Mary. 1982. "L'expression de la localisation en langue mundani." *Journal of West African Languages* 13(2):115-132.

BAIRD, Kathryn. 1984. "The Noun Phrase in Mundani." MS. Yaoundé, Cameroon: Société Internationale de Linguistique.

DURRANT, Christine and PARKER, Elizabeth. 1990. "Mundani-English Dictionary: Research Document." Yaoundé, Cameroon: Société Internationale de Linguistique.

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PARKER, Elizabeth. 1985a. "Keeping Time in Mundani: a Study of Relative Time Reference." Paper presented at the 16th West African Linguistics Society Congress, March 15-30, 1985. Yaoundé, Cameroon.

PARKER, Elizabeth. 1985b. "Mood, Tense and Aspect in Mundani." MS. Yaoundé, Cameroon: Société Internationale de Linguistique.

PARKER, Elizabeth. 1985c. "The Mundani Verb." MS. Yaoundé, Cameroon: Société Internatonale de Linguistique.

PARKER, Elizabeth. 1986. "Mundani Pronouns", in U. Wiesemann (ed.) *Pronominal Systems.* (Continuum Schriftenreihe zur Linguistik I) Tübingen: Gunter Narr Verlag. 131-165.

PARKER, Elizabeth. 1989. "Le nom et le syntagme nominal en mundani", in D. Barreteau and R. Hedinger (eds.) *Description des langues camerounaises.* (DELAN - Descriptions systématiques des langues nationales.) Paris: Agence de Coopération Culturelle et Technique/ORSTOM/Summer Institute of Linguistics. 131-177.

PARKER, Elizabeth. 1990. "The Typology of Relative Clauses and Relative Clauses in Mundani." MS. School of Oriental and African Studies, University of London.

PARKER, Elizabeth. 1991a. "Conditionals in Mundani", in B. Comrie and S.C. Anderson (eds.) *Tense and Aspect in Eight Languages of Cameroon.* Arlington: Summer Institute of Linguistics/University of Texas. 165-187.

PARKER, Elizabeth. 1991b. "Complex Sentences and Subordination Mundani", in B. Comrie and S.C. Anderson (eds.) *Tense and Aspect in Eight Languages of Cameroon.* Arlington: Summer Institute of Linguistics/University of Texas. 189-210.

1.6 The Present Study

Data for the present study were collected over the period 1978 to 1989. They include notes on conversational exchanges and public speeches; a wide range of recorded and written texts, including folk-tales, contemporary narratives, historical accounts, procedural texts and exhortations; also sentences originally ellicited to fill gaps in grammatical paradigms, or to discover the degree

of acceptability of certain constructions, especially those involving movement transformations. The dialect under investigation is the Nchingang (reference) dialect, spoken in the Bamumbu chieftaincy, Upper Mundani (see 1.4 above).

The study started out as a short paper on Relative Time Reference in Mundani, presented to the West African Linguistics Society Congress in 1985 (Parker 1985a). That initial investigation revealed the variety of possible combinations of elements marking tense, aspect and modal categories, the complex semantic shifts that they undergo in combination, and in particular the multiple functions of realis/irrealis modal prefixes. From then on, interest grew in exploring syntactic analyses capable of accounting for these phenomena.

In undertaking this enterprise, the approach adopted is twofold: on the one hand, there is the approach of traditional descriptive linguistics; on the other, syntactic analyses which fall within the theoretical framework of the "classical" version of generative syntax known as Government and Binding (GB) Theory. An outline of those aspects of the theory that are relevant to the study are set out in chapter 2.

Within the GB framework, tense, aspect and modal features are located under the inflectional constituent, INFL or I, situated in Mundani between VP and the subject of the sentence. The main purpose of this study is to investigate the content and syntactic properties of INFL in Mundani. As an initial step, chapters 3 and 4 set INFL within the wider context of general clause structure in the language. Subsequent chapters give a detailed presentation of the content of INFL, which may include various kinds of tense, aspect and modal (TAM) indicator: clitics attached to the final element of the NP in subject position; particles; auxiliaries that retain certain "verb-like" properties; items incorporated into the main verb as inflectional affixes.

A contrast is made between finite and non-finite INFL. The two are in complementary distribution, finite INFL occurring in a matrix or embedded clause with an overt subject, while non-finite INFL occurs only in embedded clauses with no overt subject. The possible content of the two types of INFL is also discrete: finite INFL may be

simple (composed of a single item) or complex (containing several items), and its contents are selected from a closed class of TAM markers; non-finite INFL is simple, composed normally of a realis or irrealis marker only. Furthermore, we argue that the two INFL-types have distinct feature specifications: finite INFL has the features [+TENSE,-AGR]; non-finite INFL is specified negatively for tense features, but has the feature [+AGR] derived from its anaphoric function as a "same-subject" marker. These distinct feature specifications have led us to handle the two kinds of INFL as separate syntactic categories, TENSE and AGREEMENT (T and AGR), projecting to TP and AgrP respectively. The content and syntactic properties of TENSE are discussed in chapters 6 and 7; the content and possible syntactic analyses of AGR in chapters 8 and 9.

The canonical case of non-finite INFL (AGR) is the realis/irrealis (R/IR) prefix attached to non-initial verbs in a consecutivized verb construction. In this case, the R/IR marking can be analysed in two ways within the GB framework: (i) in terms of a Switch Reference system; (ii) in terms of Control Theory (see chapter 9). Although we shall argue that the latter approach is the more satisfactory, it is interesting from the point of view of the theory that *both* approaches can be applied to the Mundani data, suggesting that control effects and Switch Reference systems might eventually be brought together in a unitary account.

In Mundani, the picture is complicated by the distribution of R/IR modal marking, which turns up on non-initial verbal items in any type of verb chain: that is, in sequences of consecutivized lexical verbs sharing a common subject, in serial constructions where two verbs are interpreted compositionally, and also in sequences of auxiliary (non-lexical) verbs followed by a main verb. These three kinds of verb sequence receive different analyses in the syntax, and it is difficult within the GB framework to show the similarities between them: specifically, to provide a coherent account of R/IR modal marking in the different contexts in which it occurs. This problem is addressed briefly in chapter 9, but remains open to further research.

CHAPTER 2 - THE THEORETICAL FRAMEWORK

2.0 Introduction

Our subject is approached in two ways that contrast rather sharply with each other. On the one hand, we have adopted a traditional descriptive approach, similar to that used by Comrie in his typological studies (Comrie: 1976, 1981a, 1981b). In this way we have attempted to reduce the mass of data to some kind of order. On the other hand, the syntactic analyses fall within the framework of the version of generative syntax referred to as Government and Binding (GB) Theory, initiated by Chomsky (1980, 1981), and further developed by Chomsky (1986a/b) and by other linguists working in the Chomskian tradition.

The theory is the "classical" form of the Principles and Parameters model of Universal Grammar. More recent "Minimalist" developments, while still founded on a Principles and Parameters approach, have moved away from many of the basic concepts of Government and Binding: in fact, the notion of government has disappeared altogether. While aware of these newer ideas, we have chosen to remain with the GB framework for the sake of the completeness and consistency of exposition which it offers.

This chapter sets out in general terms those aspects of GB theory that are relevant to our subject. More detail is introduced in later chapters, where it is needed to support a particular analysis.

2.1 Universal Grammar: Principles and Parameters

The theory seeks to establish a coherent system of principles and rules that will distinguish between the grammatical and ungrammatical utterances in a language, explain *why* the ungrammatical sentences are deviant, and capture relationships between utterances by means of derivational processes. A grammar that achieves these objectives is said to have attained *descriptive adequacy*.

The grammar of a particular language should in addition be based on general principles comprising the innate linguistic faculty that is common to all normal human beings and that enables them to learn any language. A grammar based on such principles is said to achieve *explanatory adequacy*.

The notion of explanatory adequacy is thus linked to the concept of a Universal Grammar (UG), which can be defined as the system of all those principles and rules that are common to all human languages. The system is innate to normal human beings: that is, we are born with a set of universal linguistic principles that enable us to acquire the grammar of any specific language.

However, such principles are inadequate on their own for the acquisition of a particular language, since languages display not only invariant principles, but also wide variation in respect of certain properties. For example, concepts such as "subject" (S), "verb" (V) and "object" (O) will apply to every language; but the linear ordering of these SVO items differs from one language to another. In addition to universal principles, then, there are parameters along which languages vary, and UG offers a range of choices for those principles that are parametrized. Since UG is composed of both a set of invariant principles and parametrized principles yielding variation between languages, the theory of UG is often referred to as the "Principles and Parameters" model.

2.2 Lexical Information in the Syntax

In this section, we consider the role of lexical information in syntactic representation within the framework of UG.

2.2.1 Predicates and Argument Structure

We define a predicate informally as an element that expresses a property of an argument, or the relation between arguments. Frequently the predicate role will be filled by a verb, but other lexical categories eg. adjectives, prepositions, nouns, may also function as predicates in certain contexts.

Each predicate has its argument structure: that is, it is specified for the number of arguments that it requires (the obligatory elements in the sentence). Possible optional elements or adjuncts are not specified. Argument structures may be symbolised using the notation of formal logic: for example, the intransitive verb **go** (a "one-place" predicate) would be represented as G(x), where G is the predicate **go** and x the entity performing the action designated by the predicate; the transitive verb

see (a "two-place" predicate) would be written S(x,y). The argument structure replaces to some degree the traditional notion of transitivity, and also subcategorization (the idea that an element "subcategorizes for" a particular type of complement).

2.2.2 Thematic Roles and the Theta Criterion

The semantic relationships between a predicate and its arguments are known as thematic roles or theta- (θ)-roles. For instance, the verb **kill** requires two arguments: a subject argument which receives the theta-role AGENT, and an object argument which receives the theta-role PATIENT. The predicate theta-marks its two arguments and is said to have a thematic structure. The component of the grammar that controls the assignment of thematic roles is known as Theta Theory.

There is a lack of consensus regarding the number of thematic roles that exist and the labels that should be attached to them. For the purpose of this study we adopt the following inventory of types that are commonly referred to in the literature, and that are taken from Haegeman 1994:49-50.

(a) AGENT: person who intentionally initiates the action expressed by the predicate.
(b) PATIENT: person or thing undergoing the action expressed by the predicate.
(c) THEME: person or thing affected by the action expressed by the predicate.
(d) EXPERIENCER: entity experiencing some psychological state expressed by the predicate.
(e) BENEFACTIVE: entity benefitting from the action expressed by the predicate.
(f) GOAL: entity towards which the activity expressed by the predicate is directed.
(g) SOURCE: entity from which something is moved as a result of the activity expressed by the predicate.
(h) LOCATION: place in which the action/state expressed by the predicate is situated.

It is sometimes difficult to distinguish between PATIENT and THEME, and some linguists prefer to combine these roles under the label THEME.

The information regarding thematic roles - the semantic relationships between a predicate and its arguments - is a part of the speaker's lexical knowledge, and can be encoded in the Lexicon by means of a theta grid (1). The grid may specify the types of thematic role to be assigned (1a), or designate the roles simply by numbers (1b). In the latter case the number that is underlined eg. 1, signals by convention the external (subject) argument, while remaining numbers (2,3) denote internal (object) arguments. The assignment of a theta role to its argument is identified by an index (a subscript letter *i*, *j*....) in the lower part of the grid. Where two arguments are coreferential, referring to the same entity, they are coindexed (receive the same index); where they are non-coreferential they are distinguished by different indices. A theta role that is assigned to an argument is said to be "saturated".

(1) kill: verb

a.

AGENT NP	PATIENT NP
i	*j*

b.

1 NP	2 NP
i	*j*

Each theta role in the thematic structure of a predicate must be assigned to one and only one argument, and each argument must receive one and only one theta role - a requirement known as the Theta Criterion. A consequence of the Theta Criterion is that the thematic structure of a predicate encoded in its theta grid establishes the minimal components of a sentence containing that predicate: that is, lexical information determines syntactic structure to a significant degree.

In work on phrasal projections by Higginbotham (1985), Speas (1990) and others, the notion of the thematic grid is extended. Every word or morpheme in a language has, in addition to the lexical part of its meaning encoded in the Lexical Conceptual Structure (LCS), a "structural meaning" endoded in a theta grid. The grids of predicates percolate upwards into the phrase marker; theta grids of arguments are satisfied by virtue of their position in the syntactic structure and therefore are not passed upwards. Each node in a given structure is thus associated with a grid, and each place in a given grid must be saturated or

"discharged". Discharge of thematic roles occurs only under the structural relation of sisterhood, and this mechanism actually licenses nodes (a node *must* be in a thematic relation to its sister in order to be licensed). This extension of Theta Theory demonstrates the determining role of lexical information in syntactic representation. It is discussed further in chapter 7.

2.2.3 The Projection and Extended Projection Principles

The idea that lexical information plays a crucial role in syntax is summarized in the Projection Principle, which states that lexical information must be syntactically represented. This means that whenever a place in a thematic grid is *not* represented in the syntax, the resulting structure will be ungrammatical. For example, if the verb **kill** assigns only one of its two theta roles, the resulting sentence will be ill-formed:

(2) * **She killed....**
    * **....killed a fly**

In order to arrive at correct syntactic representations, there is a further (purely structural) requirement, summed up in the Extended Projection Principle (EPP), which states that every sentence has a subject. This is regarded as a universal property of sentences. In some languages such as English, it results in the subject position being filled by an expletive element (it, there) in certain constructions; in so-called "pro-drop" languages such as Italian, the subject position may be filled by a non-overt NP element *pro* that shares some syntactic properties with its overt NP counterpart.

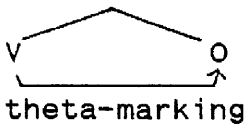
2.2.4 Direct and Indirect Theta Marking

While lexical information determines syntactic structure to a large degree, so also syntactic structure influences the assignment of thematic roles. There is an assymetry in the assignment of theta roles to subject and object arguments that manifests itself in two ways. Firstly, the choice of object will affect the thematic role of the subject (3a/b), but not the reverse.

(3)a. **John broke his arm.** John has the PATIENT role.
   b. **John broke the window.** John has the AGENT role.

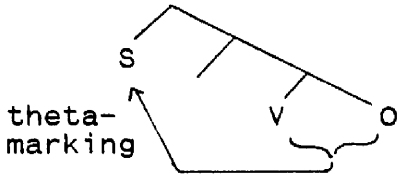
Secondly, the predicate and its object may form an idiomatic expression with free choice of a subject (**break a taboo, break ranks, break the news..**); but there are no corresponding "subject idioms" with free choice of an object. These phenomena are accounted for in terms of the different mechanisms employed for assigning theta roles to objects and subjects respectively. The object argument is theta-marked directly by the verb, under the structural relation of sisterhood:

(4)a. Direct theta-marking



The subject argument is assigned its theta role indirectly or compositionally, by the complex [V+O] constituent.

(4)b. Indirect theta-marking



2.3 Phrase Structure: X-bar Theory

Universal Grammar is a modular system. In 2.2 we presented some essentials of the module referred to as Theta Theory; a second module concerns universal principles of phrase structure and is called X-bar Theory. The theory was initiated by Chomsky (1981) and developed further in Chomsky 1986a.

2.3.1 Heads, Specifiers and Complements

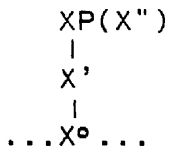
The clause is the basic unit of analysis, and is composed of morphemes/words grouped together in phrases.

A phrase XP (where X is N, V, A or P) is the projection of a head of the category X:

(5)a.


The X-level is referred to as the "zero" level, often written as X^{o} level. The XP level is called either the "maximal projection", abbreviated as X^{max}, or the "double-bar" level, written X". It is normally assumed that there is at least one intermediate level in between the zero and maximal levels: that is, the "single-bar", X-bar or X' level.

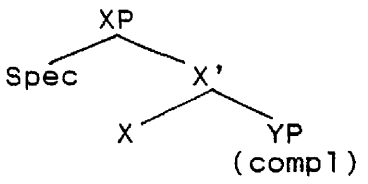
(5)b.



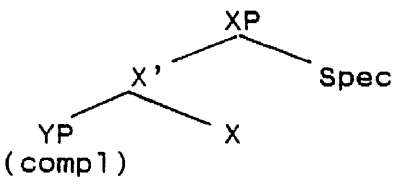
Elements of different kinds may specify the head with respect to some feature: for example, an adjectival head A might be specifed by a degree quantifier (very, a little...); a nominal head N might be specified by a (definite or indefinite) determiner. Such items occupy the specifier (Spec) position. Lexical heads may also take different kinds of complement, which take the form of maximal projections.

Languages differ as to the linear ordering of specifier and complement(s), which may be both on the same side, or on different sides, of the projection head. They also differ along what is termed the Head Parameter: in a head-initial language the complement(s) follow the head; in a head-final language they precede the head. (5c) shows two possible XP configurations in a head-initial and a head-final language.

(5)c. Head-initial



Head-final

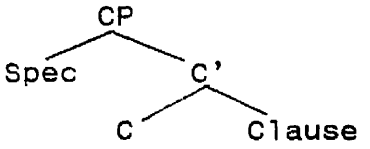


2.3.2 Projections of Functional Heads

The formulation of these general principles in terms of the categorial variable X means that they can be applied to the phrasal projections of all lexical categories; and in Chomsky 1986a, it is demonstrated that they apply equally to the projections of certain functional categories that have no lexical content, but which encode some grammatical feature.

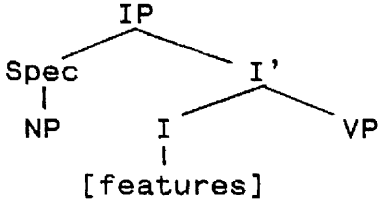
For example, the English complementizer **that** encodes the grammatical notion of "declarative" in relation to the clause that it introduces. It can be treated as a head C (or COMP), followed by a clausal complement; and as with any other head it has a specifier position also. The structure of CP in English is diagrammed in (6).

(6)



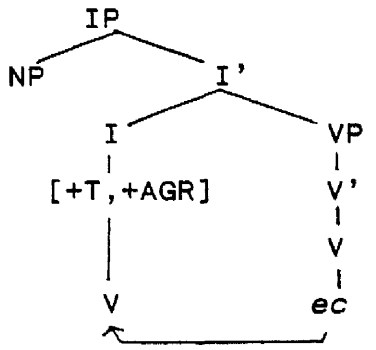
A second example of a functional head is the category Inflection (INFL or I). INFL occupies a position in between the subject and VP, and contains grammatical features such as tense-aspect-modality (often referred to simply as TENSE), agreement properties (AGR), and closed classes of verbal items (auxiliaries). Although the TENSE and AGR features start out under INFL, they may end up attached to the verb as inflectional affixes at a subsequent level of representation (see 2.6 for an outline of different levels of representation). Under X-bar Theory, INFL is regarded as the functional head of the clause, whose projection is constrained by the same principles as other phrasal projections. The complement of INFL is VP; the Spec position is occupied by the NP functioning as subject:

(7)



In order to combine the features under INFL with the verb, it is proposed in recent work (Travis 1984; Baker 1988; Pollock 1989; Belletti 1990 and others), that V is raised to INFL. The process is sketched out in (8); in this and subsequent examples, *ec* represents an empty category left behind by a moved element.

(8)



(8) is seen as an instantiation of head movement in syntax, which has the general property of operating upwards and never "lowering". This and other movement operations are examined further in section 2.5.1.

Note finally that INFL dominates both tense and agreement properties. The INFL of a finite clause typically has the features [+TENSE,+AGR], while INFL in a non-finite clause lacking tense and agreement properties will be specified as [-TENSE,-AGR]. These feature specifications for finite and non-finite clauses are not universals, however, as we shall see in the case of Mundani, where tense features are a property of finite clauses and agreement features characterize infinitival clauses. In cases where tense and agreement features operate independently of each other, it may be useful to regard them as two separate functional heads - T and AGR - which project to TP and AgrP respectively (see Pollock 1989 and others).

2.4 Case Theory

Case Theory is the subcomponent of UG that is concerned with case assignment. The essentials of the theory are presented here, along with its interaction with Theta Theory.

2.4.1 Morphological and Abstract Case

The degree to which a language marks case overtly varies. In Latin and German, there is a rich system of morphological case marking appearing on nouns, pronouns, adjectives and determiners. The examples in (9) and (10) are taken from Haegeman (1994:157-158).

(9) Latin

a. **Caesar Belgae vincit**
NOM ACC
Caesar beats the Belgians.

b. **Belgae Caesarem tement.**
NOM ACC
The Belgians fear Caesar.

(10) German

a. **Der Student hat den Lehrer gesehen.**
NOM ACC
The student has seen the teacher.

b. **Der Lehrer hat den Studenten gesehen.**
NOM ACC
The teacher has seen the student.

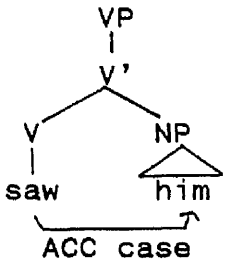
Other languages such as English retain only vestiges of morphological case marking, for example in pronoun forms such as he (NOM), him (ACC), his (GEN).

Within UG, all overt NPs must receive abstract case which may or may not be morphologically realized. For instance, heads such as V and P assign ACCUSATIVE case to their complement NPs, and tensed INFL assigns NOMINATIVE case to its subject NP in the Spec position. Non-finite INFL is not a case-assigner.

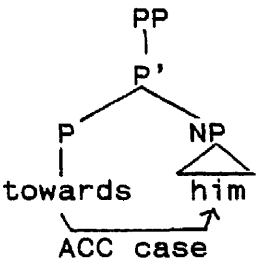
2.4.2 Structural Conditions on Case Assignment

Case is assigned under the structural relation of government, where government is defined as in (26), section 2.5.2, in terms of m-command rather than first branching nodes. Thus in (11a), the head V assigns ACCUSATIVE case to its object NP; in (11b), the head P assigns ACCUSATIVE case to its complement NP; in (11c), the head finite I governs and assigns NOMINATIVE case to its subject NP in the Spec position.

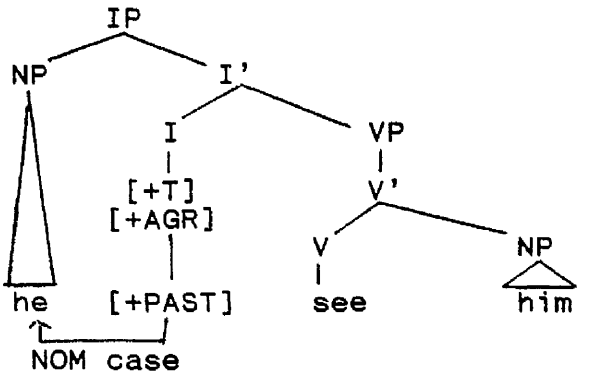
(11)a.



b.

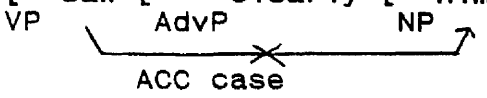


c.



In English, there is a further structural condition on case assignment in that it may operate only when the assigner and assignee are adjacent to each other. In (12), the verb **saw** is prevented from assigning ACCUSATIVE case to its object NP by the intervening adverbial projection:

(12) ***[saw [clearly [him]]]**

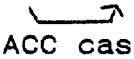


The work of Pollock (1989) and others suggests that adjacency may be a universal, rather than a language-specific, constraint on case assignment.

2.4.3 The Case Filter and Exceptional Case Marking

Every overt NP - whether in an argument position or not - must be assigned abstract case. This requirement, known as the Case Filter, "filters out" any sentence containing an overt NP that lacks case. An example of the application of the Case Filter is seen in the non-finite sentences in (13), where (b) is unacceptable since there is no potential case-assigner for the subject NP (the preposition for has been deleted, and non-finite INFL cannot assign case).

(13)a. **For him to pay the price would be impossible.**

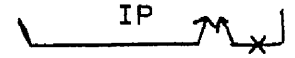


b. ***Him/He to pay the price would be impossible.**

It may be unclear at first sight why a particular sentence is *not* eliminated by the Case Filter. In (14a) for example, non-finite INFL in the embedded clause cannot assign case to its subject **him**, and there is no other

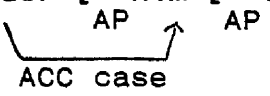
potential case assigner for the subject within the lower clause. However, since IP is not a barrier to outside government (see 2.5.5), V in the higher clause is able to govern the subject of the lower clause, the adjacency requirement is also met, and the higher V thus assigns ACCUSATIVE case to the subject NP of the lower clause, satisfying the Case Filter. This process of assigning case across a clause boundary is known as Exceptional Case Marking (ECM).

(14)a. I want [him to pay the price]



A similar analysis applies to small clauses (SCs) such as (14b), where the SC is usually regarded as a kind of "super-projection" of the category of its predicate (A, in this instance). The verb in the higher clause case-marks the subject of the lower clause across the clausal boundary AP.

(14)b. I consider [him [completely mad]]

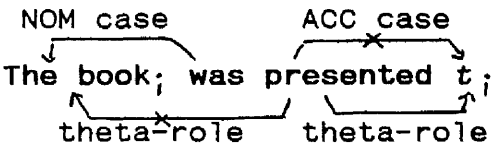


2.4.4 Structural and Inherent Case

The syntactic properties of passivization are relevant to Case Theory in that they oblige us to distinguish between two kinds of abstract case.

A passive verb loses the ability to assign ACCUSATIVE case to its complement NP: it is said that this case is "absorbed by" passive morphology. Related to the absorption of ACCUSATIVE case is the absorption of the external theta role, which requires the subject NP to be either suppressed altogether, or demoted to an A-bar position (to a prepositional "by-phrase" in English). Since the object NP fails to be case marked by V and so risks violating the Case Filter, it moves up to the vacated subject position where it can be assigned NOMINATIVE case by tensed INFL. The mechanism is diagrammed in (15).

(15)



Consider now the sentences in (16) in German, which has a richer system of morphological case-marking than English. The examples are from Haegeman (1994:186).

(16)a. **Sie sieht ihn.**
she sees him:ACC

b. **Er wird gesehen.**
he:NOM is seen

c. **Sie hilft ihm.**
she helps him:DAT

d. **Ihm wird geholfen.**
he:DAT is helped

e. **Sie gedachte vergangener Freuden.**
she remembered past:GEN joy:GEN

f. **Vergangener Freuden wurde gedacht.**
past:GEN joy:GEN were remembered

These examples show that whereas ACCUSATIVE case is absorbed by passive morphology (16a/b), DATIVE and GENITIVE cases survive passivization (16c-f). In other words, there are two kinds of abstract case: inherent case that remains unaffected by movement processes such as passivization, and structural case eg. ACCUSATIVE, which does not survive under movement. The distinction between inherent and structural case is a useful one in accounting for various phenomena, including double object constructions (see chapter 3).

2.4.5 Visibility and Chains

Abstract case interacts with Theta Theory in an interesting way. Under Theta Theory, a predicate can assign a theta role only to an NP that is *visible*; and an NP is rendered visible only by being assigned abstract (inherent or structural) case. To be recognized as an argument of some predicate, then, an NP must be made visible by case; or put another way, the NP is licensed by its case properties.

The visibility condition on NPs raises further questions about passive sentences such as (15), part of which is repeated here as (17).

(17) $[_{IP}$ **The book**$_i$ $[_{I}$ **was** $[_{VP}$ **presented** t_i $]]]$

Since the NP **the book** cannot receive ACCUSATIVE case from the passive verb, it violates the Case Filter and also remains invisible for theta marking. It must therefore move out of VP in order to be case marked, and to become visible for theta marking. However, in its new [Spec,IP] position where it duly receives NOMINATIVE case, it cannot be governed by the verb **presented**, and so cannot receive its internal theta role. That is, **the book** needs to be in two places at once: in a position where it can receive case, and in a position where it can be assigned the correct theta role.

The problem is overcome by the notion of chains, introduced in 2.5.1 in the discussion of movement transformations. A moved constituent and the trace that it leaves behind it remain linked in a chain by coindexation: for example, a moved argument NP and the coindexed gap that it leaves behind form an A-chain symbolized as ⟨NP,*ec*⟩. A single theta role is associated with a single theta position in such a chain. Where an argument NP moves out of the theta position eg. to acquire case in a passive construction, the chain will be visible because of the NOMINATIVE case assigned to its highest position, and so the NP can pick up the internal theta role via the chain, without violating the visibility condition.

The fact that case, and thus visibility for theta marking, are properties of chains, has led Chomsky (1986a:97) to re-express the Theta Criterion as follows:

(18) Theta Criterion

> Each argument appears in a clain containing a unique visible theta position P, and each theta position P is visible as a chain containing a unique argument A.

2.5 Government and Binding

2.5.1 Movement

Two types of movement have been referred to in earlier sections: verb movement to INFL, cited as an example of head-to-head movement (2.3.2), and NP movement in passive sentences, motivated by the need for the object NP to acquire case (2.4.4/2.4.5).

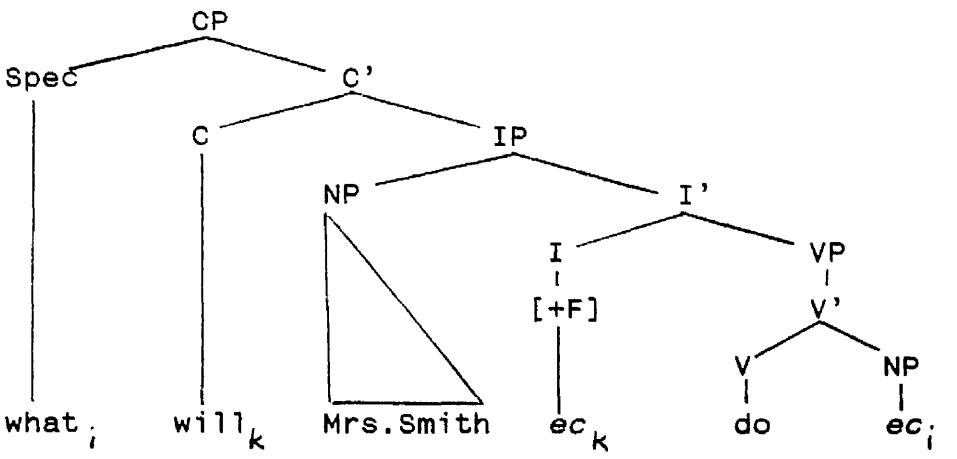
Another type of movement applies to what are known as wh-expressions. These are phrasal constituents (NP, AdvP, PP, AP), which contain an interrogative word that in English will often begin with the letters *wh-* (hence the name). Examples of wh-expressions are seen in (19).

(19)

what	(NP)	where	(AdvP)
which person	(NP)	when	(AdvP)
whose hat	(NP)	why	(AdvP)
to whom	(PP)	how	(AdvP)
in which drawer	(PP)	how big	(AP)

The movement of wh-expressions is parametrized: in languages such as Mundani they remain *in situ*, while in English they move to the specifier position of CP as shown in (20).

(20) **What$_i$ will$_k$ Mrs Smith *ec*$_k$ do *ec*$_i$?**



(20) is also another instance of head-to-head movement: an auxiliary such as will (the head I of IP) moves up to the head C of CP in interrogative sentences in English.

When an element is moved up a tree, it leaves behind an empty category (*ec*) in its original position. The relationship between an *ec* and the moved element in its new position (its "landing site") is termed a binding relation: the moved item is the binder or antecedent; the *ec* or trace (often abbreviated as *t*) is the bindee, and the relation is symbolised by coindexation.

(21) $X_i \ldots\ldots\ldots\ldots t_i$

binder/ antecedent — bindee

The moved element and its trace together form what is called a "chain". Where an NP is moved to an argument position (an A-position), it A-binds its trace, and the moved element and the trace together form an A-chain. Where a wh-expression is moved to [Spec,CP], which is a non-argument position (an A'-position), it A'-binds its trace and together with the trace forms an A'-chain.

The movement of constituents implies more than one level of representation in the syntax. The question of different levels of syntactic representation will be taken up again in section 2.6.

2.5.2 Government

There are structural constraints common to all antecedent-bindee relations. First, the antecedent must always be higher in the tree than its bindee: that is, movement can occur only upwards. Secondly, binding is always a local relationship: specifically, the antecedent must govern its trace.

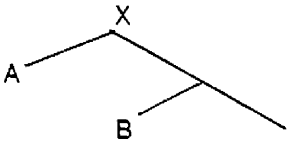
The notion of government is a crucial one in the theory. The starting point is the structural relation of c-command, first defined by Reinhart 1981. Chomsky (1986b:8) defines c-command as follows:

(22)a. C-command

> A c-commands B iff A does not dominate B, and every X that dominates A dominates B.

The relationship can be diagrammed as in (22b):

(22)b.



In (22b), X can be interpreted in two ways: (i) as the first branching node dominating A, in which case the relation is one of strict c-command; (ii) as a maximal projection. Under this second interpretation, A is said to m-command B.

If a moved element is to bind its trace, it must m-command the trace. Furthermore, since certain projections intervening between the binder and its trace are barriers capable of blocking the binding relationship - even if m-command holds - the structural relation between binder and bindee must be one of "local m-command", otherwise referred to as government.

Government is defined in various ways in the literature, but here we adopt a definition based on Chomsky (1986a/b):

(23) Government

- A governs B iff A m-commands B and no barrier intervenes between A and B.
- Maximal projections are barriers to government.
- Governors are heads.

Governors can be further specified as the lexical heads V, N, A, P, and tensed INFL.

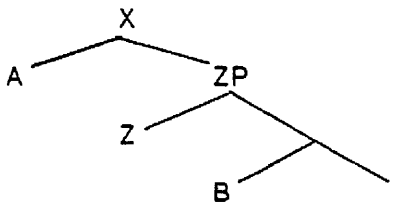
The stipulation that maximal projections are barriers to government is referred to as the Minimality Condition. Rizzi (1990) formalizes the notion of minimality as follows:

(24) Minimality

A governs B iff there is no node Z such that
(i) Z is a potential governor for B
and (ii) Z m-commands B
and (iii) Z does not m-command A.

In (25), the structure contravenes the Minimality Condition, so A is not the governor of B:

(25)



The definition of government is reformulated to include the notion of minimality:

(26) Government

A governs B iff
(i) A is a governor
(ii) A m-commands B
(iii) Minimality is respected.

Put another way, the maximal projection of each head is a governing domain into which outside heads cannot govern; thus maximal projections are barriers to outside government through the operation of the Minimality Condition. However, as seen in (27) (from Haegemann 1994:165-166), barriers are not always straightforward to define:

(27)

[For [him [to [attack Bill]]]] would be surprising.
CP IP I VP

ACC case

In (27), the preposition **for** assigns ACCUSATIVE case to the pronoun subject **him**. Case-marking occurs under the structural relation of government, so C governs N. If C governs into the projection of the non-finite head I, we are forced to conclude that the maximal projection IP does not constitute a barrier for outside government in this instance. Non-finite I has the features [-T,-AGR] in English, and is therefore said to be too "weak" to form a barrier. More will be said about the identification of barriers to government in section 2.5.5.

2.5.3 Binding Theory

We turn from the notion of government to Binding Theory, the component of UG that regulates the interpretation of NPs, including non-overt NP elements. Binding Theory distinguishes between three kinds of overt NP:

(i) *Anaphors*: NPs (reflexives and reciprocals) that require an antecedent for their interpretation.

(ii) *Pronouns*: NPs that require contextual information for their interpretation, but which do not need an antecedent.

(iii) *Referential Expressions (R-expressions)*: full NPs that have independent reference within the universe of discourse.

The rules for interpreting these NP types are summed up in the following three principles:

(28) Binding Theory

Principle A: An anaphor must be bound in its governing category;

Principle B: A pronoun must be free in its governing category;

Principle C: An R-expression must be free everywhere;

...where the governing category (GC) is defined as the minimal domain containing the NP concerned, its governor, and an accessible subject/SUBJECT.

SUBJECT (sometimes called "big SUBJECT") refers to AGR in INFL in a finite clause, which hosts the agreement features of the NP in subject position. A governing category can thus be defined in relation to either the subject NP itself (small subject), or the agreement features in AGR (big SUBJECT).

(29) illustrates how Binding Theory is applied. In this sentence the ungrammaticality of the reflexive **himself** must be explained.

(29) ***John$_i$ thinks [$_{CP}$ that [$_{IP}$ himself$_i$ will go]]**

Himself is an anaphor and so needs to be bound in its GC. The embedded clause labelled IP contains the anaphor; its governor (tensed INFL); an accessible SUBJECT (the agreement features in tensed INFL). The embedded clause is therefore the GC of **himself**; but since it contains no binder for the anaphor the sentence is ungrammatical.

Anaphors, pronouns and R-expressions are not syntactic primitives, but can be re-expressed in terms of combinations of features.

(30) Anaphors [+ anaphor, - pronominal]
Pronouns [- anaphor, + pronominal]
R-expressions [- anaphor, - pronominal]

The principles of Binding Theory can also be recast in terms of features:

(31) Binding Theory

Principle A: An NP with the feature [+anaphor] must be bound in its GC.

Principle B: An NP with the feature [+ pronominal] must be free in its GC.

It is unnecessary to re-formulate Principle C, since R-expressions are inherently referential and therefore must be free in all contexts.

Binding Theory applies not only to overt NPs, but also to certain phonetically null NP elements. There are four types of non-overt NP: the trace left behind by NP movement; the trace of a moved wh-expression; *pro*, the null subject of a finite clause that functions like an overt pronoun; PRO, the null subject of an infinitival clause. In terms of feature matrices, the four types are classified as follows:

(32)

Non-overt NP	Features	Corresponding overt NP
(a) NP-trace	[+anaph,-pronom]	anaphor
(b) *pro*	[-anaph,+pronom]	pronoun
(c) wh-trace	[-anaph,-pronom]	R-expression
(d) PRO	[+anaph,+pronom]	-

Non-overt NP types (a), (b) and (c) are subject to the principles of Binding Theory in the same way as the corresponding overt NP types. There is no overt NP corresponding to PRO (d). PRO has a pronominal-type reference (*you, we, they..*), but it also resembles an anaphor in that it is referentially dependent on (controlled by) another NP in the sentence (**the police** in (33)):

(33) **The police**$_i$ **are considering [** **whether**
CP
[PRO$_i$ **to abandon the search]]**
IP

If PRO is both a pronominal and an anaphor, it must be both free and bound in its GC, according to Principles A and B of Binding Theory. This, of course, is logically impossible. We conclude that PRO lacks a GC: that is, it occupies a position where it is ungoverned and so is not subject to the constraints of Binding Theory. The sub-component of UG that regulates the distribution and interpretation of PRO is known as Control Theory, and is outlined briefly in chapter 9.

2.5.4 Bounding Theory and the ECP

Apart from the controls on antecedent-bindee relations imposed by Binding Theory, UG defines constraints on movement operations in two main ways: by Bounding Theory and the Empty Category Principle (ECP).

Ross (1967b) observed that it is impossible to extract a wh-expression from a complex NP containing a clause, and also from an indirect question. He called these two constituents "islands" with respect to movement, and the prohibition on movement out of them "island constraints". Examples are seen in (34).

(34)a. Complex NP island constraint

*[Who$_i$ did [John make [the claim
CP IP NP
[that [he saw t_i]]]]]?
CP IP

b. Indirect question island constraint

*[Who$_i$ did [John tell you
CP IP
[how$_k$ [he had met t_i t_k]]]]
CP IP

In Chomsky's work, a more general treatment of island constraints is attempted by defining bounding nodes that limit how far a wh- or NP constituent may be moved. The module of the grammar that defines bounding nodes is known as Bounding Theory, and the restriction on the distance of movement is formulated in the Subjacency Condition:

(35) Subjacency Condition

Movement cannot cross more than one bounding node.

In English, IP is taken to be a bounding node. In (34a/b) the moved wh-element crosses two IP nodes, subjacency is violated, and the sentences are ungrammatical.

Under Binding Theory, traces of moved NPs or wh-expressions must be formally licensed by government. However, simple government on its own is insufficient to account for certain constraints on movement. In English, for instance, an object can be moved across an overt complementizer (36), but a subject cannot (37), and this assymmetry between objects and subjects is not explained either by the Subjacency Condition or by licensing under simple government.

(36) Object Movement

a. **Whom$_i$ do you think [$_{CP}$ ø [$_{IP}$ he will invite t_i]]?**

b. **Whom$_i$ do you think [$_{CP}$ that [$_{IP}$ he will invite t_i]]?**

(37) Subject Movement

a. **Who$_i$ do you think [$_{CP}$ ø [$_{IP}$ t_i** will arrive first]]?

b.***Who$_i$ do you think [$_{CP}$ that [$_{IP}$ t_i** will arrive first]]?

The ungrammaticality of (37b) is accounted for by a general requirement - the Empty Category Principle (ECP) - that traces be *properly* governed in order to be licensed. Proper government is achieved in one of two ways: either by theta-government or by antecedent government, and a governor may be either a head or a maximal projection. The ECP is summarized in (38) (Chomsky 1986a.)

(38) The Empty Category Principle

Traces must be properly governed.
A properly governs B iff A theta-governs B,
or A antecedent governs B.
A theta-governs B iff A governs and theta-marks B.
A antecedent-governs B iff A governs B and A is coindexed with B.

In (36), the verb **invite** theta-governs the object trace which is therefore licensed. In (37), INFL governs the subject trace, but it does not theta-mark its subject. Proper government is therefore possible only by antecedent-government, and since IP does not constitute a barrier to government, it should be possible to govern the trace from outside of IP. This is straightforward in

(37a), where the subject of the higher clause **who** is the nearest available governor and is coindexed with the trace. In (37b), however, the overt item in COMP is the nearest potential governor for the trace, but cannot theta-mark it and is not coindexed with it either. Lacking a proper governor, the subject trace violates the ECP and the sentence is unacceptable.

2.5.5 Barriers

We have referred to barriers that block government and to bounding nodes that block movement: yet intuitively the two are similar concepts. Chomsky (1986b) has formulated a definition of barriers that can be used both in the definitions of government and proper government, and also in the Subjacency Condition.

Chomsky distinguishes between those maximal projections that are opaque to outside government and those that are not, by means of the notion of L-marking (Chomsky 1986b:14-15).

(39) L-marking

A L-marks B iff A is a lexical category that theta-governs B.

A maximal projection that is L-marked potentially allows some element under it to be governed from outside; a maximal projection that is not L-marked is potentially a blocking category (BC) for outside government:

(40) Blocking Category

C is a BC for B iff C is not L-marked and C dominates B.

The maximal projection IP does not conform entirely to the definition in (40). On its own it can never be a barrier, and it has been suggested that this is owing to its defective status (it consists of a feature bundle rather than of morphemes/words). The combination of a CP dominating IP can, however, function as a barrier; or in Chomsky's terms, CP becomes a barrier by inheritance. The contrast between IP on its own and the combination [CP...[IP...]] is seen in (41): in (41a), the subject of the embedded IP **him** receives ACCUSATIVE case from the higher verb **believe**, indicating that IP is transparent to government; in (41b), PRO must by definition be

ungoverned, so we conclude that CP and IP together block government from the matrix clause.

(41)a. **I believe [him to be happy]**
IP

b. **John decided [[PRO to fix the car]]**
CP IP

The notion of blocking category is used to define a barrier as follows (Chomsky 1986b:14):

(42) Barrier

A is a barrier for B iff (a) or (b):
(a) A is a maximal projection and A immediately dominates C, C is a BC for B.
(b) A is a BC for B, A is not IP.

This definition of a barrier is then used to redefine government (43). Note that (43i) allows for two different kinds of government: antecedent government and government by a head.

(43) Government

X governs Y iff
(i) X is either of the category V,N,A,P; *or* X and Y are coindexed;
(ii) X c-commands Y;
(iii) no barrier intervenes between X and Y;
(iv) minimality is respected.

The notion of barrier is used also to replace the concept of a bounding node in the definition of subjacency:

(44) Subjacency Condition

Movement must not cross more than one barrier.

To summarize informally the role of barriers in constraining syntax: government cannot cross a barrier, and movement must not cross more than one barrier.

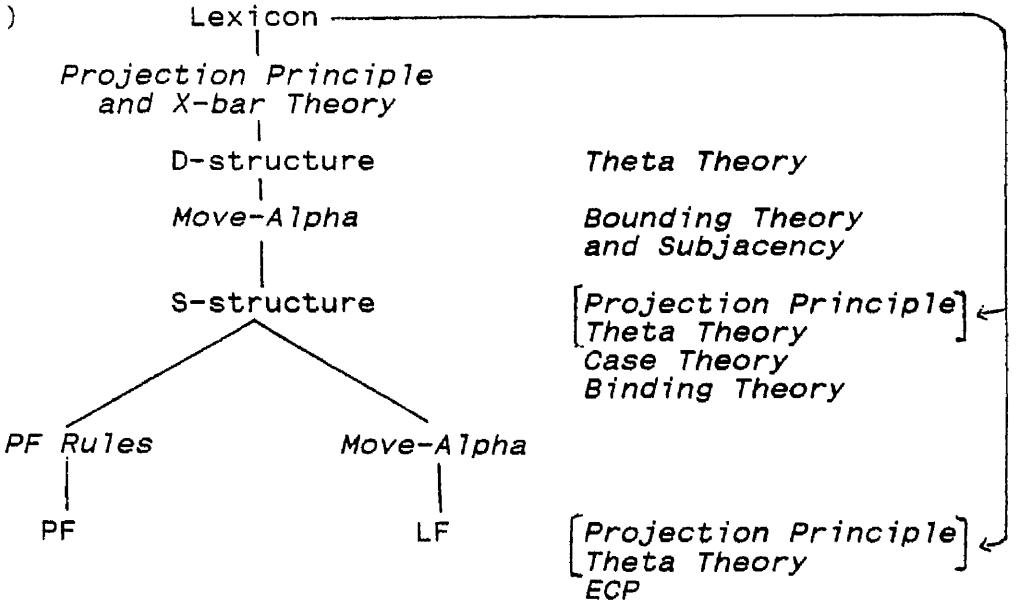
2.6 Levels of Representation

We have referred earlier to the application of the Projection Principle which, along with X-bar Theory, links the predicate-argument structures in the Lexicon with a subsequent, syntactic level of representation; also to movement transformations which link different levels of representation within the syntax. Underlying the whole GB

approach, then, is the assumption of a model of grammar composed of several "layers" or levels of representation.

These levels are often diagrammed as in (45), in what is termed the "T-model". (45) is essentially Horrocks' version of the model (Horrocks 1987:287).

(45)



The Lexicon contains both purely lexical information in the form of a Lexical Conceptual Structure (LCS) for each morpheme/word, and also structural information in the form of theta grids. By the application of the Projection Principle and rules of X-bar Theory, the information in the Lexicon is projected to the level of syntactic representation known as D-structure. The form of D-structure is constrained by the requirements of Theta Theory.

The various syntactic movement operations mentioned earlier are conflated in GB Theory into the general rule of Move-alpha (Move-α), which "transforms" D-structure into S-structure. Move-alpha is constrained by Bounding Theory and Subjacency. Representations at the level of S-structure are still subject to the requirements of the Projection Principle and of Theta Theory: that is, movement transformations are structure-preserving. In addition, possible S-structures are constrained by Case Theory and the requirements of Binding Theory.

A further level of representation known as Logical Form (LF) is the level where rules of interpretation are applied. LF is derived from S-structure by the further application of Move-alpha. Examples of movement rules that map S-structure onto LF are quantifier-raising, and wh-raising in languages such as Japanese, where wh-expressions remain *in situ* at S-structure, but exhibit certain ECP effects which indicate that raising does occur at some subsequent level of representation. Once again, movement operations are structure-preserving: that is, like S-structure, LF must conform to the Projection Principle and to Theta Theory, and traces must be properly governed according to the Empty Category Principle (ECP).

A fifth level of representation referred to as Phonetic Form (PF) consists of the superficial appearance of a sentence based on the S-structure representation, with all phonological rules applied.

CHAPTER 3 - CLAUSE STRUCTURE (1)

3.0 Introduction

In Chapters 3 and 4, major aspects of Mundani clause structure are examined. The basic structure of matrix clauses is presented first (3.1), along with a discussion of headedness and the position of COMP, which is analysed as a split (discontinuous) constituent. Sections 3.2 and 3.3 deal with interrogatives and negation respectively: in both cases the basic clause structure is largely adhered to, with the addition of relevant markers signalling the interrogative or negative mode. Chapter 4 covers embedded clauses and Topic and Focus constructions.

3.1 Basic Clause Structure

3.1.1 Word (Constituent) Order

The basic word (constituent) order in Mundani is SVO, as seen in (1a):

(1a) **Wòt kõ -lè bɔ ekab nyaŋ...** **SVO**
person INDEF-P3 have money much
A certain person had a lot of money...
(=There was once a very rich man...)

Other logical permutations of this basic order are ungrammatical (1b) (but see the discussion of Topic and Focus in 4.2 for cases where the last possibility, OVS, may be allowed):

(1b) ***Wòt kõ ekab nyaŋ lè bɔ** ***SOV**
***Lè bɔ wòt kõ ekab nyaŋ** ***VSO**
***Lè bɔ ekab nyaŋ wòt kõ** ***VOS**
***Ekab nyaŋ wòt kõ lè bɔ** ***OSV**
***Ekab nyaŋ lè bɔ wòt kõ** ***OVS**

The basic order remains unaffected when a subject or object NP is pronominalized, like **tà/awɔb** in (2a) and (2b) respectively, or when both the subject and object NPs are pronominals as in (2c), or when the object NP is realized as an empty category, as in (2d):

(2)a. **Tà-lè bɔ ekab nyaŋ**
he P3 have money much
He had a lot of money.

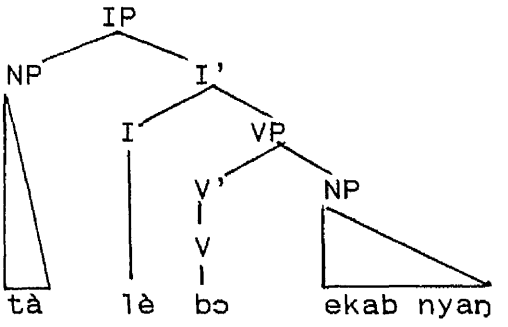
b. **Bèzi bu -lè ye awɔb**
women DEF P3 see them
The women saw them.

c. **Tà-lè ye awɔb**
he P3 see them
He saw them.

d. **Tà-lè ye** *ec*
he P3 see
He saw (it/them).

Adopting the theoretical framework outlined in chapter 2, the sentences in (1a) and (2a-d) are assigned (provisionally) the structure in (3). Sentence (2a) is used as an example:

(3)



Prepositional phrases (PPs) and adverbials are normally placed after the object NP as in (4):

(4)a. **Tà-lè bɔ ekab nyaŋ afɨ' angaa yu**
he P3 have money much LOC:time that DEF
He had a lot of money at that time.

b. **Bɨ bakà ko ebąąte èghɨ**
you:PL NEG:PF know to:use things

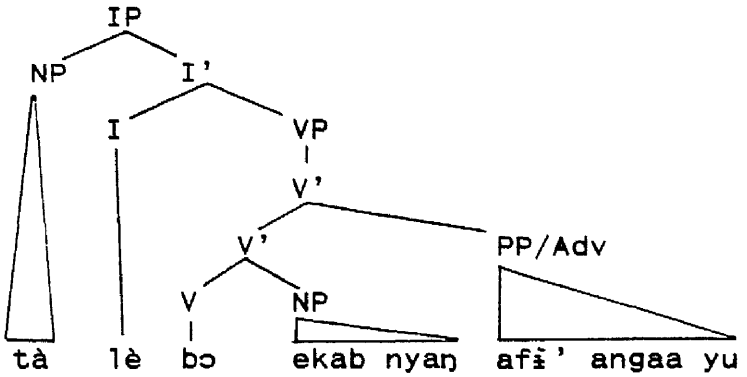
sitsa' yaa ǹdɨŋndɨŋ
world this straight
You do not know how to use
the things of this world faithfully.

A PP or adverbial may not intervene between a verb and its object NP:

(4)c. ***Tà-lè bɔ afɨ' angaa yu ekab nyaŋ**
d. ***Bɨ bakà ko ebąąte ǹdɨŋndɨŋ èghɨ sitsa' yaa**

To account for this restriction, the structure proposed in (3) is amended to (5). Here, the object NP is adjoined to the V' immediately dominating the verb, from which it cannot be separated in the surface string. The PP or adverbial is then adjoined to a higher V' node (however, we shall have reason later to distinguish between VP and sentence adverbials (see 4.2.1.3).

(5)



There are cases where a PP or adverbial is extracted and moved to a higher adjunction (TOPIC) position. Such examples are discussed in 4.2.

3.1.2 Double Objects

Like English, Mundani presents two possibilities for handling dative expressions (so-called "indirect objects"): either as a prepositional phrase (PP) following the object NP (6a/b), or as an NP in the immediate postverbal position, preceding the regular "direct object" NP (6c). In the former case, the NP in the "indirect object" expression may be headed by a pronominal(6a) or a nominal (6b); in the latter, a pronominal head is acceptable (6c) while a nominal head is not (6d).

(6)a. **Bɔ̀ -le ŋa [ekab] [abua yê]**
they-P3 give NP money PP to you:SG
They gave money to you.

b. **Bɔ̀ -le ŋa [ekab] [abua bǫ bɔb]**
they-P3 give NP money PP to children their
They gave money to their children.

c. **Bɔ̀ -le ŋa [awê] [èkab]**
they-P3 give NP you:SG:ACC NP money
They gave you money.

d. ***Bɔ̀ -le ŋa [bǫ bɔb] [èkab]**
they-P3 give NP children their NP money
They gave their children money.

In (6a/b), we see the familiar order of direct object NP plus PP. The dative expression, the PP **abua yê** or **abua bǫ bɔb**, is adjoined to a higher V' like any other PP (see the structure in (5)).

In (6c), the "dative" expression has undergone "Dative Shift", appearing in the immediate postverbal position,

preceding the direct object NP. Here it no longer appears as a PP, but as an NP in the Objective/Accusative form. That is, Mundani, like English, allows for two postverbal object positions.

Note that an NP that has undergone Dative Shift cannot be separated from the verb by reversing the order of the two object NPs:

(6)e. ***Bɔ̀-le ŋa ekab awê**[1] *They gave money you.*

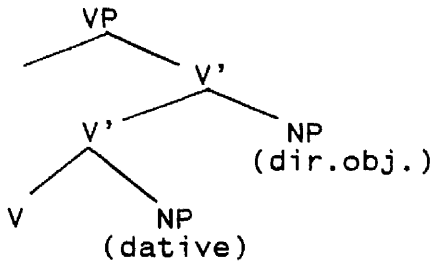
Also, whereas the direct object NP **èkab** can be extracted eg. to become the head of a relative clause, the "dative" NP cannot, since such movement would separate it from V:

(6)f. **Ekab wu**$_i$ **[bɔ̀ -le ŋa** *t*$_i$ **awê la]**
money DEF REL they-P3 give you:ACC SUB
The money that they gave you...

g. ***Awê**$_i$ **[bɔ̀ -le ŋa** *t*$_i$ **ekab wu la]**
you:ACC REL they-P3 give money DEF SUB
You to whom they gave the money...

The inseparability of the verb and its "dative" complement illustrated in (6g) supports the analysis of dative structures proposed by Chomsky (1955/1975). Chomsky suggests that the dative expression is in fact an "inner object", forming a constituent with the verb that excludes the regular ("direct") object NP. The structure is seen in (7):

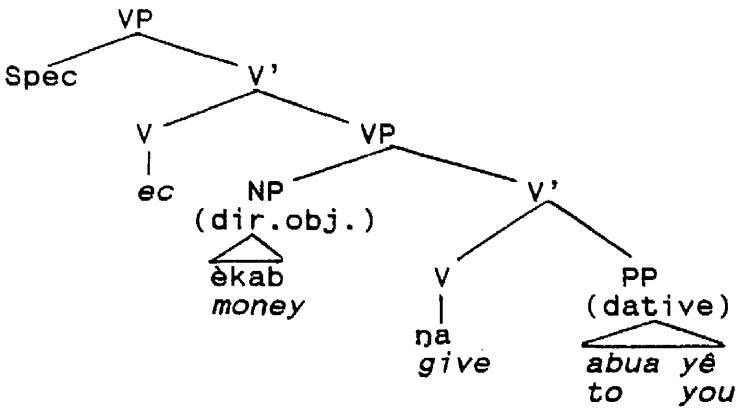
(7)



Compare now the "dative" NPs **yê** and **awê** in sentences in (6a) and (6c). The Case marking differs: in (6a), this NP is marked for Dative Case by **abua**, *to*, and the concord consonant **y**; in (6c), it is marked for Accusative Case by the class 1 object marker **a** plus the concord consonant **w**. However, the NP receives the same thematic role of GOAL in both sentences. This fact suggests the possibility of a common D-structure and a derivational account of the double object construction in (6c).

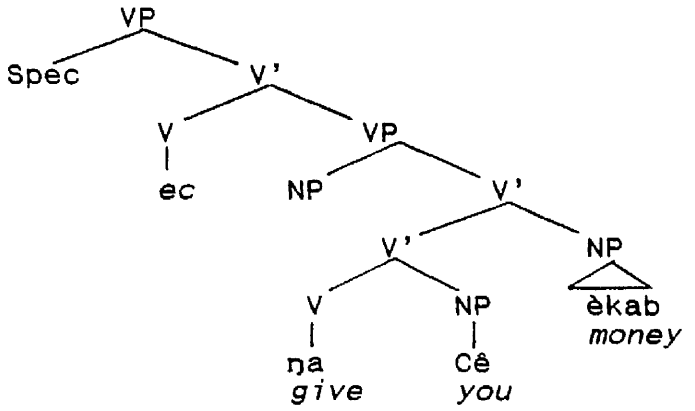
We propose the following derivation for (6c), based on Larson's (1988) account of double object structures, and following the pattern of Passive constructions in other languages.

(8a) Stage I



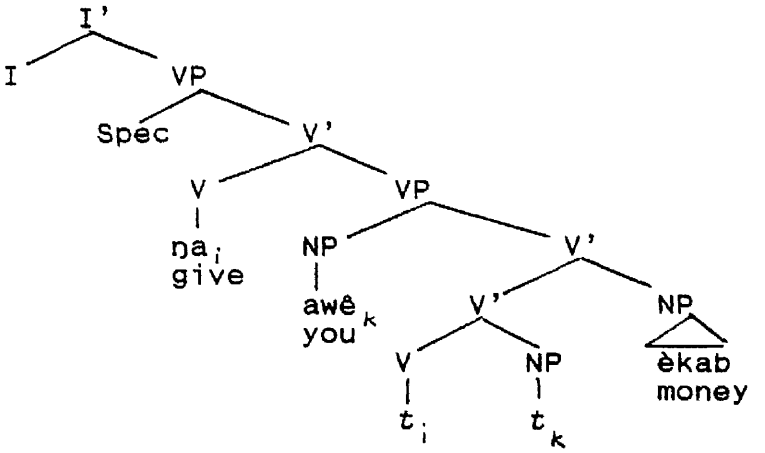
Comment: V + the "dative" expression (PP) form a constituent that excludes the direct object NP.

(8b) Stage II



Comment: The overt Case marking of the "dative" expression is absorbed, leaving a Caseless NP. (Notice that it is not clear *why* Case marking is absorbed here; in Passive structures in other languages, it is claimed that Case is absorbed by Passive morphology on the verb, but there is no special verb morphology in double object constructions.) The verb also fails to assign a theta-role to the NP **èkab** in the normal "subject" position. This argument therefore undergoes demotion to a V' adjunction position.

(8c) Stage III



Comment: The verb and its "dative" complement move up: V moves to the higher VP head position where it is governed by INFL; the "dative" NP moves up in order to receive Objective/Accusative Case from V at S-structure.

There remains the problem of how the direct object NP in V' adjunction position acquires Case, and how Objective/Accusative Case can be assigned twice in a single-predicate structure such as (8). Larson suggests a solution in terms of V' reanalysis. Briefly, the lowest V' constituent is optionally recategorized as a complex V, that is itself transitive, and thus able to assign its unsaturated theta-role (Theme, in this instance), along with Objective Case, to the NP in V' adjunction position. Larson makes a distinction between the two kinds of Objective Case assigned in such a configuration: the Case assigned by V to the external "direct object" NP is inherent Case - a purely lexical property of V; that assigned to the internal "dative" NP is structural Case, which depends crucially on V being governed by INFL. Larson claims that the assignment of these two kinds of Objective Case is common to all transitive verbs, but that it is only in double object structures that they are "pulled apart" and become visible as two distinct entities. For further discussion of this approach to double objects, see Larson (1988:359-362).

Larson's account of double objects can certainly be applied to the Mundani data; but it has two weaknesses, one theoretical and the other empirical.

On a theoretical level, it assumes a formal version of X-bar theory known as the "Single Complement Hypothesis". This theory allows for only one specifier and one

complement in each phrasal projection at D-structure, and only one node at each level of the phrasal projection (hence the need in (8c) to recategorize the lowest V' constituent as a complex V, in order to avoid the iteration of the intermediate V' node, as well as to assign inherent Case to **èkab**). Although the theory imposes tight restrictions on phrasal projections, it permits - in fact, it *requires* - the free generation of empty heads not related to any lexical item (for example, the empty verbal head in (8a)), which then serve as landing sites for head-to-head movement. As Speas (1990) points out, the generation of such empty heads is not motivated by independent principles of the grammar, and seems to be a mere expedient to overcome the strict limitations imposed on phrase structure.

On the empirical level, Larson's approach fails to account for certain constraints on the use of double objects in Mundani.

First, as already noted, the inner "dative" NP must be realized as a pronominal and not as a noun. So (9), with a full nominal in the inner object position, is unacceptable.

(9) ***Bɔ̀ -lè ŋa bɔ bɔb ekatè bu**
they-P3 give children their letters DEF
They gave their children the letters.

Secondly, according to the data available so far, only a limited range of verbs may select a double object. Examples are seen in (10) through (13); (14) and (15) are unacceptable. The verbs are underlined throughout.

(10)a. **Ñ-de su ànə yu abua to**
I told the matter to him.
b. **Ñ-de su atò ànə yu**
I told him the matter.

(11)a. **?Ñ-de bììte lə engạ̀ wu abua tò**
?I asked the meaning of the word of him.
b. **Ñ-de bììte atò lə engạ̀ wu**
I asked him the meaning of the word.

(12)a. **Ñ-de ŋa ekab abua tò**
I gave money to him.
b. **Ñ-de ŋa atò èkab**
I gave him money.

(13)a. **Ñ-de fù èkab abua tò**
I borrowed money from him.
b. **Ñ-de fù atò èkab**
I lent money to him.

(14)a. **Ñ-de lɔɔ ekab abua tò**
I begged money from him.
b. ***Ñ-de lɔɔ atò èkab**
I begged him for money.

(15)a. **Ñ-de ghɨ àfà' yu abua tò**
I did the work for him.
b. ***Ñ-de ghɨ atò àfà' yu**
I did for him the work.

Note that (13a) and (13b) have different meanings: in (13a) **abua tò**, *from him*, has the thematic role Source, while **atò**, *to him*, in (13b) is the Goal. This contrast can be put alongside the acceptability of the (b) sentences in (10) through (12), where **atò** likewise has the thematic role Goal, and the unacceptability of (14b) and (15b), where **atò** is (respectively) the Source (of the money begged) and the Beneficiary (of the work done). These data suggest a constraint on double object constructions in terms of thematic roles: namely, that the inner "dative" NP must be the Goal. Thus, (13b) cannot mean *I borrowed money from him*, since in this case the inner NP would have the thematic role Source - a role that is disallowed for this NP in a double object structure. (14b/15b) are ruled out since in neither sentence is the inner object NP the Goal.

To summarize: the double object structure is subject to two non-syntactic constraints which Larson's account fails to address:

(i) - The inner object NP must be a pronominal;
(ii) - The inner object NP must be assigned the thematic role of Goal.

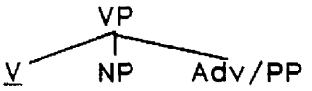
In view of these constraints, Speas' tentative approach to the problem of double objects (1990) in terms of Lexical Conceptual Structures (LCSs) may perhaps offer a way forward and merits further research.

3.1.3 Headedness

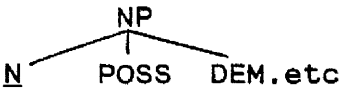
As expected with SVO basic word order, Mundani is a head-initial language (Greenberg 1963). Examples of each major phrasal category are given in (16), where the phrasal heads are underlined. The schemata underneath

each example are simplified "flat" structures, omitting specifier and intermediate (single-bar) positions.

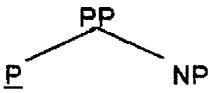
(16)a. **Tà-à [<u>na</u> [àghɨ yu [abua tò]]]**
he-P2 VP give NP thing DEF PP to him
He gave the thing to him.



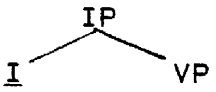
b. **[<u>èka'à</u> yạ yu]**
NP lamp:c3 my:c3 DEF:c3
this my lamp



c. **[<u>agbele</u> [èkụ lu]]**
PP on:top:of NP bed:c5 DEF:c5
on the bed

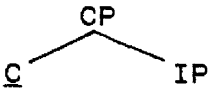


d. **[Bɔ̀ -<u>le</u> <u>lɔ̂'</u> [ŋ̀-kɨ́'ɛ́]]**
IP they P3 P1 VP R-come
They then came...



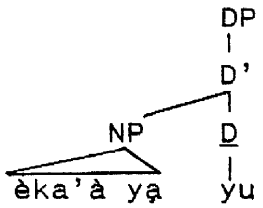
e. **Tà ø wu wòt nɨ́ [<u>ŋ̀kàànê</u> [tà ø**
he PF be person big CP because IP he PF

bɔ èkabe vi bɔ̂ bòt bi]]
have money his:REF and people his:REF
He is an important person because he has money and people.



The structure of NP needs further comment. If we take the traditional view that the head of NP is N, then NP conforms to the head-initial pattern observed in the other phrasal categories. If, however, we adopt a DP analysis, the resulting (simplified) structure is that seen in (17):

(17)



In (17), DP is the s-projection of N (ie. N is the semantic head of DP), but the c-projection of D (ie. the determiner is the syntactic head of DP) (Abney 1986). Consequently, the syntactic head D of the phrasal category DP is in final position, and selects the maximal category NP[2] from right to left. It thus contravenes the normal pattern in the language of a head-initial structure, with heads selecting maximal categories from left to right. Therefore, in order to provide a consistent account of Mundani phrasal categories, we adopt an NP rather than a DP analysis.[3]

3.1.4 COMP

We have already affirmed that C, the head of CP, is in initial position (16e). Further examples are seen in (18), where the complementizers **nê**, *that* and **ǹdɨ**, *how*, and the conjunctions **na**, *if* and **m̀bɨ'ɨ**, *as*, fall under C in initial position within CP.

(18)a. **Ma me la'a [nê**
I INC say CP that

[wạ am ø ka fà' àfà' yu]]
IP child my OBL NEG work work:c7 DEF:c7
I have been saying that my child should not do the work.

b. **Bɔ ø kô [ǹdɨ [bɔ̀ -ɔ ghɨ̃ la]]**
they PF know CP how IP they-F do SUB
They know how (=what) they will do.

c. **A -a lɔ̀'ɔ à ø lạ akɨ̀ŋ**
you-F F1 you:SG OBL cook cooking:pot

[na [à bakà bɔ afà' la]]
CP if IP you:SG NEG:PF have work SUB
You should cook a meal if you don't have any work to do.

d. **Ghɨa wu [m̀bɨ'ɨ**
do:IMPER only CP as

[tà-a ø-sù -a awê la]]
IP he-F R-tell-IMP you:SG:ACC SUB
Just do as he is telling you.

Wh-words in Mundani do not move to COMP, as in English, but remain "in situ", either in argument position (**wàà**, *who?*; **eghà⁴**, *what?*), or in an oblique (adjunction) position (**na**, *how?*; **nèŋà**, *where?*). Examples are seen in (19). Note that each wh-word is accompanied by a general question marker in clause-final position, which may be either non-emphatic **-â** (Q) or emphatic **-le'** (EQ).

(19)a. Subject Position

[Eghā⁴ ø ghɨ
CP what PF do/happen

[ka bɔ ø tụ]-le'?]
CP before they PF refuse -EQ
Why did they refuse?
(Lit: What happened before they refused?)

b. Object Position

[Bɨ ø ye a wàà aba' və -â?]
CP you:PL PF see OBJ who LOC:place DEM-Q
Whom did you (pl) see there?

c. Oblique (Adjunction) Position

[Bà-a ghɛ̃ aghɨ yaa na -â?]
CP we-F do thing this how-Q
How shall we do this thing?

d. **[Bɔ ø sa atò nèŋà -â?]**
CP they PF leave him where-Q
Where have they left him?

Since wh-words do not move, they should in principle be able to co-occur with a complementizer or conjunction in COMP. This proves to be the case, as seen in (20). Such co-occurrences are however subject to certain semantic constraints (see 3.2.3 for further details).

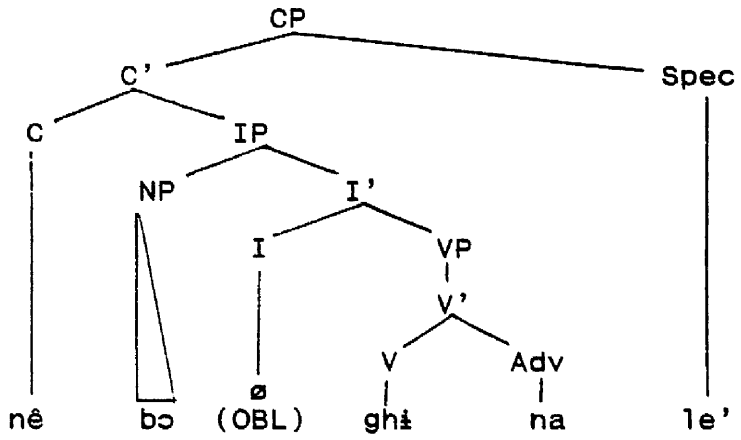
(20) **Bɔ -ɔ̀ ŋ̀-kɨ' -â è-sù -a**
they-IMP R-come-IMP R-say-IMP

[nê bɔ̀ ø ghɨ na -le'?]
CP that they OBL do how-EQ
They are coming and saying, what should they do?

If C, the head of CP, is in initial position, and wh-words remain "in situ", the question then arises as to the structural position of clause-final particles such as the general or emphatic interrogative marker **-â/-le'** mentioned above, or the subordinate clause marker **la** (SUB) seen in (18b/c/d). What is this CP-final position?

Although the language is head-initial and C (the head of CP) thus precedes its complement IP, there is no theoretical requirement that C and its specifier position be in any particular order. Tuller points out this fact in her study of certain head-*initial* Chadic languages, where the [FOCUS] feature is assigned to clause-*final* [Spec,CP] position (Tuller 1989). Conversely, a head-final language such as Vata or Gbadi, where C is in clause-final position, may have a clause-*initial* [Spec,CP] (see Koopman 1984). So in Mundani, we propose that **-â/-le'/la** fall under [Spec,CP], and that [Spec,CP] is clause-final, on the opposite side of IP to COMP. We then assign the following structure to each CP where **-â/-le'/la** occurs. The subordinate clause in (20) is taken as an example:

(21)



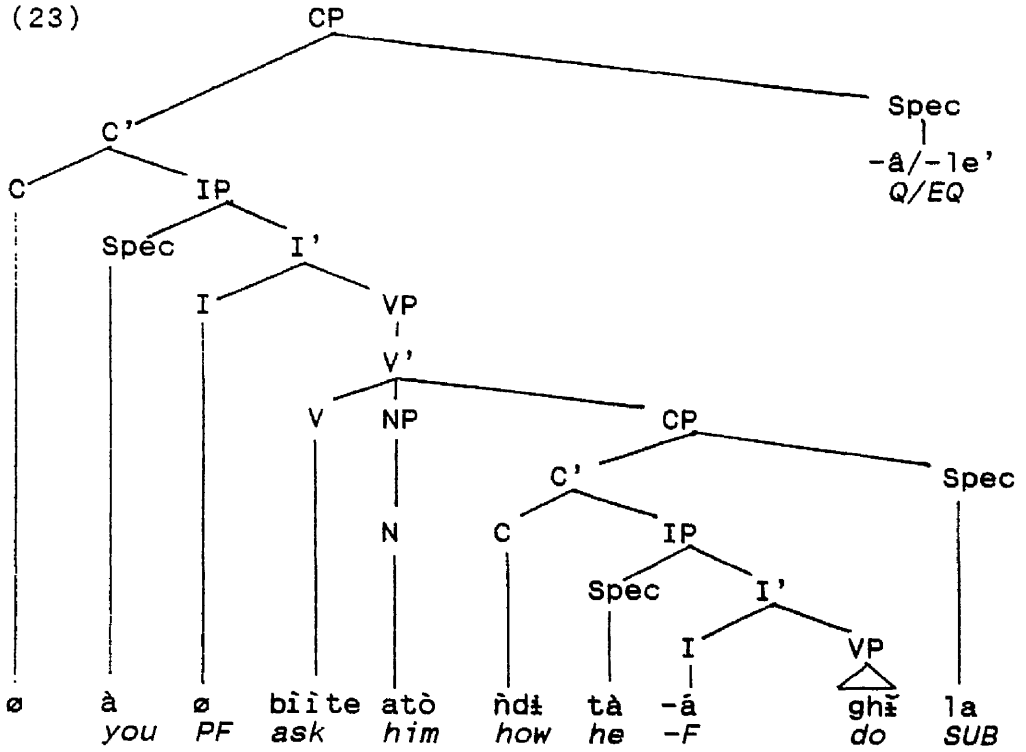
Since (21) allows for both head and specifier of CP to be filled simultaneously, although separated from each other by material in IP, the COMP constituent may be regarded as "split" or discontinuous.

It will be observed that the subordinator **la** appears occasionally to co-occur with the interrogative marker **-â** or **-le'**, as in (22):

(22) **[A ø bìite atɔ̀ [ǹdɨ̀ tà-a ghɨ̌ la]-â/-le'?]**
CP you:SG PF ask him CP how he-F do SUB -Q/-EQ
Have you asked him how (=what) he will do?

In such sentences, **la** is in the specifier position of the lower (subordinate) CP, while **-â/-le'** occupies the specifier position of the higher (matrix) CP. In other words, each [Spec,CP] will have only one filler. The structure is shown in (23).

(23)



3.2 Interrogatives

3.2.1 Direct vs. Indirect Questions

This discussion of interrogatives focusses on "direct questions", since so-called "indirect questions" do not exist per se in the language. Sentences that are expressed by an indirect question in English are structured differently in Mundani: for instance, by a complement clause introduced by **ndɨ**, *how* (24a), or by a nominal plus relative clause (24b), or by using a direct question form (24c).

(24)a. Complement Clause

Tà ø ko [ñdɨ yè -a ghɛ̃ la]
he PF know CP how he:LOG-F do SUB
He knows how (=what) he will do.

b. Nominal + Relative Clause

Mâ ø kô wòt wu [à ø wu wùà la]
I PF know person DEF REL you:SG PF be DEM SUB
c1 c1 c1
I know who you are.

c. Direct Question

Ba ø bìîte awɔb [nê [tà ø dzə ŋ̀-gà
we PF ask them CP that IP he PF leave R-go

avi alɛ][è ø wu eghà lɛ'?]]
himself thus IP ds PF be why EQ
We asked them why he left.

3.2.2 Polar Questions

There is a basic distinction in the language between polar (yes/no) questions, and questions signalled by wh-words or expressions that require an answer with content.

Yes/no questions are marked by one of the following three forms:

(i) **-V̂**: Falling tone assigned to the clause-final vowel, which undergoes lengthening (in either a closed or open syllable).

(ii) **-â** A general (non-emphatic) interrogative marker encliticized onto the final word in the clause.

(iii) **-lɛ'** An emphatic interrogative marker encliticized onto the final word in the clause.

Examples of these three forms are seen in (25).

(25)a. Falling Tone

À ø zə
you:SG PF hear
You have heard.

À ø zê:?
you:SG PF hear
Have you heard?

b. Non-emphatic Interrogative Marker

À ø ghɨ aghɨ yaa abua am-â?
you:SG PF do thing this for me-Q
Have you done this thing for me?

c. Emphatic Interrogative Marker

Bɔ ø bìîte atò [nê, tà ø wu tò -à wu
they PF ask him CP that he PF be him-FOC DEF

[tà-a kɨ'ɨ la]-lɛ']?
REL he-F come SUB -EQ

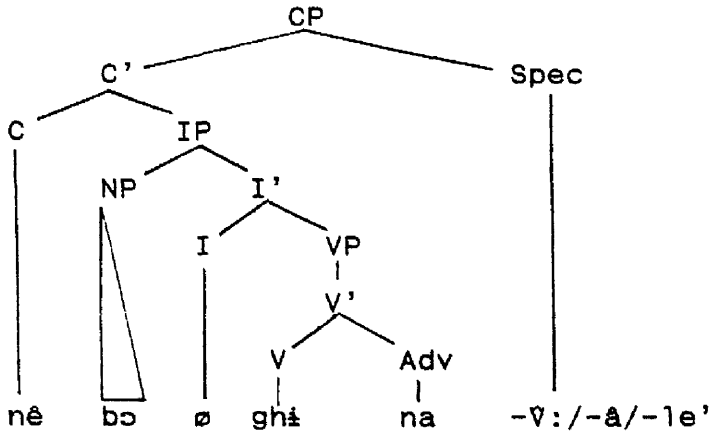
They asked him if he was really
the one who would come.

Clause-final falling tone marking the interrogative mode (25a) is found in the Chadic group eg. Hausa (Jaggar p.c.), but cannot be considered an areal feature since it

is noticeably absent in other Grassfields Bantu languages. For example, in Bafut a clause-final falling intonation contour is characteristic of imperatives and declaratives, and is raised to *level* pitch in polar questions (Mfonyam 1988:103). In Mundani, the falling tone may derive from the general, non-emphatic interrogative marker **-â**: the loss of the distinctive vowel quality would leave the tone free to attach itself to an immediately preceding vowel that would receive compensatory lengthening. The choice between **-ə̀** and **-â** appears to be somewhat arbitrary; no phonological conditioning has been observed. The selection of the emphatic form **-le'** over **-ə̀/-â** is determined by the situational context: if the addressee has failed to hear or to understand the question asked of him, the question will be repeated, but with the clause-final question marker changed from **-ə̀/-â** to **-le'**. This change may have the effect of expressing the speaker's annoyance or impatience; it also demands an appropriate response from the addressee. This latter function is doubtless connected with the use of **-le'** as a vocative marker, to draw the attention of someone who is being addressed directly and is expected to respond: so at the beginning of a prayer, God will be addressed as **Tàt wa Mbɔɔmà le'**, *Our Father God*.

As already shown in 3.1.4, the interrogative morpheme **-â/-le'** is assigned to the [Spec,CP] position that is situated on the opposite side of IP to the head position C, ie. in final position in the linear ordering of items under CP. We suggest that the falling tone be likewise assigned to [Spec,CP]; it would then dock onto whatever syllable immediately precedes it. The structure presented in (21) is repeated here for convenience:

(26)



3.2.3 Wh-questions

Non-polar or content questions are signalled by a wh-word or expression. These words/expressions form a closed class, and are listed below:

(27)

wàà/bàà	*who?(sg/pl)*	**N**	**+ CV(V)-so'-â**	*how many..?*
eghà	*what?*	**N**	**+ ŋa**	*which..?*
na	*how?*	**ka**	**+ N**	*what kind of..?*
nèŋà	*where?*			

It will be observed that "when?" is missing from the list. This interrogative can be expressed only by means of the periphrasis **a ka afɨ'-â?**, *LOC-what:kind:of-time-Q?* There is a corresponding periphrastic expression meaning "where?", used as an alternative to **nèŋàà: a ka adzi'-â?**, *LOC-what:kind:of-place-Q?*

Wh-words/expressions are accompanied obligatorily by one of the three interrogative markers used for polar questions: **-V̀:/-â/-le'**. This means that where the wh-word/expression occurs in clause-final position, the interrogative morpheme will be attached to it, altering its appearance eg. **nâ:**, **wà-â** (note the vowel reduction), **eghà-le'**, etc. The wh-word **CV(V)-so'-â**, *how many?* invariably carries the interrogative morpheme **-â**, regardless of its position in the clause. In other words, in this particular case, the interrogative marker **-â** has been incorporated into the root.

The root **-so'-â**, *how many?* must in addition carry a noun class prefix of the form CV(V)-, to agree with the class of the nominal that it modifies (Parker 1989:147). The form **CV(V)-so'-â** may function not only as a modifier, but also as an independent pronominal form when the nominal is absent: eg. **yea-so'-â** (class 6), *how many (of them)?* Similarly, the "selective" wh-word **ŋa**, *which?* can be used as an independent pronominal with the addition of the appropriate noun class prefix (plus interrogative morpheme): eg. **we-ŋa-â** (class 1), *which one?* In contrast, **ka**, *what kind of?* never carries a noun class prefix and so may not function as an independent pronominal form.

Finally, notice that **eghà**, *what?* will frequently be translated into English as *why?* (see (29b) below).

Examples of the different wh-words/expressions are seen in (28).

(28)a. **Wàà ø ŋa akatè yaa abua yê:?**
who PF give letter this to you:SG:Q
Who has given this letter to you?

b. **À ø ghɨ eghà abua am-â?**
you:SG PF do what for me-Q
What have you done for me?

c. **Bɨ ø ye aghɨ yaa na -le'?**
you:PL PF see thing this how-EQ
How do you (pl) see this thing?

d. **Bɔ ø sa atò nèŋà -â?**
they PF leave him where-Q
Where have they left him?

e. **À ø nɨ ñdɔŋ te- so' -â?**
you:SG PF take horn:c10 c10-how:many-Q
How many cups/glasses have you taken?

À ø nɨ te-so'-â?
How many have you taken?

f. **À ø nɨ ñdɔŋ na -â?**
you:SG PF take horn which-Q
Which cups/glasses have you taken?

À ø nɨ te-ŋa-â?
Which ones have you taken?

g. **Eyaa ka anê**
this what:kind matter

[n ø-dzè -a ane ye la]-le'?
REL I R-hear-IMP about you:SG SUB -EQ
What is this that I'm hearing about you?

It has already been observed that wh-words/expressions are not moved to COMP, as in English, but will normally remain "in situ". The different structural positions which they may occupy are illustrated in (29-31), where several sentences from (28) are repeated for convenience.

(29) External Argument (Subject) Position

a. **Wàà ø ŋa akatè yaa abua yê:?**
who PF give letter this to you:SG:Q
Who has given this letter to you?

b. **Eghã[4] ø ghɨ ka bɔ me kɨ'ɨ ale -le'?**
what PF do/happen before they INC come thus-EQ
What has happened that they are coming like this?
(=Why are they coming...?)

(30) Internal Argument (Object) Position

a. **Bɨ ø ye a wâ:?**
you:PL PF see OBJ who-Q
Whom did you see?

b. **À ø ghɨ eghà[4] abua am-â?**
you:SG PF do what for me-Q
What have you done for me?

c. **À ø nɨ ǹdɔŋ te -so' -â?**
you:SG PF take horn:c10 c10-how:many-Q
How many cups/glasses have you taken?

d. **À ø nɨ ǹdɔŋ ŋa -â?**
you:SG PF take horn which-Q
which cups/glasses have you taken?

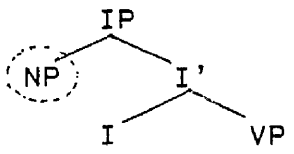
(31) Oblique (V' adjunction) Position

a. **Bɨ ø ye aghɨ yaa na -le'?**
you:PL PF see thing this how-EQ
How do you (pl) see this thing?

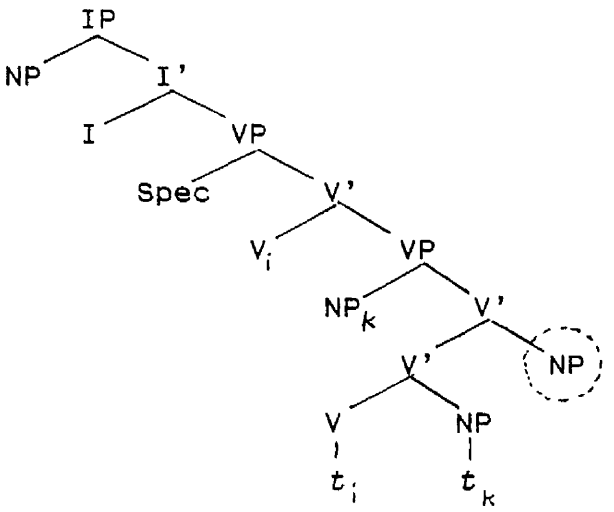
b. **Bɔ ø sa atò nèŋà -â?**
they PF leave him where-Q
Where have they left him?

These three structural positions are schematized in (32):

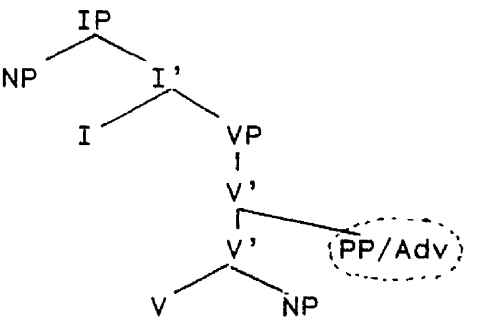
(32)a. External Argument



b. Internal Argument



c. Oblique



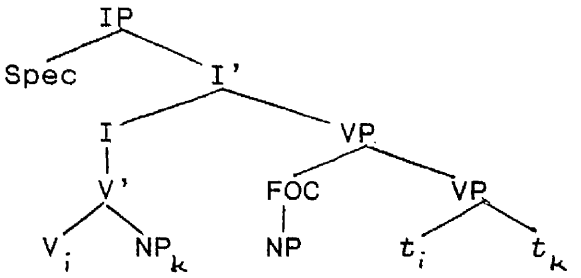
There is a restriction on the placement of certain wh-expressions. The forms **CV(V)-so'-â**, *how many?* and **ŋa**, *which?*, whether used as noun modifier or as pronominal, will not normally appear in the external argument position:

(33)a. ***Bòt be-so' -â le kɨ'ɛ̂:?**
people:c2 c2-how:many-Q P3 come:Q
How many people came?

b. ***Bɔ ŋa e ø tsê:?**
children which they PF pass:Q
Which children have passed (the exam)?

A "how many?" or "which?" expression with a "subject" (agentive) function will occupy a *post*verbal focus position instead of [Spec,IP]. This focus position is distinct from the NP object position, and immediately follows the latter in the linear order of elements at S-structure. Its location in structural terms will be discussed in section 4.2.2.2; for the moment we assume that the structure is roughly as in (34). (Note that for the sake of simplicity, this configuration does not take account of possible double objects or dative shift.)

(34)



In the case of **CV-so'-â?**, *how many?* used as a noun modifier, there are two possibilities: either the entire NP occupies the focus slot (35a), or the noun is raised to the preverbal topic position (see 4.2.1.2), while the wh-modifier remains in the postverbal focus position (35b). In the case of "which?" expressions, the entire NP appears in the postverbal focus position (35c); a split between the noun and its wh-modifier **ŋa** is not acceptable (35d).

(35)a. **Ɛ̂ le kɨ'ɨ̂ bòt be-so' -â?**
ds P3 come people:c2 c2-how:many-Q
How many people came?

b. **Bòt e le kɨ'ɨ̂ be-so' -â?**
people they P3 come c2-how:many-Q
How many people came?

c. **É ø tsè bɔ na -â?**
ds PF pass children which-Q
Which children have passed?

d. ***Bɔ e ø tsè na-â?**
Which children have passed?

A further remark concerns **ka + N**, *what kind of..?*: this wh-expression represents the only case where the questioned element is (optionally) moved. In (28g), for example, **ka anâ** has been extracted from the internal argument (object) position to become the head of a relative clause. The movement is used only to topicalize the wh-expression which could equally well remain "in situ" (see 4.2.1 for an account of Topicalization):

(36) **N ø-dzâ -a ka anâ ane ye -le'?**
I R-hear-IMP what:kind matter about you:SG EQ
What am I hearing about you?

Turning from the structural positions occupied by wh-words/expressions to more general constraints on the use of wh-question forms, we observe the following:

(i) Within a given sentence, normally only one element may be questioned at a time. The multiple questions in (37) are thus of doubtful grammaticality:

(37)a. **?*Wàà ø ghɨ eghà abua am-â?**
who PF do what for me-Q
Who has done what for me?

b. **?*Wàà ø ghɨ̂ àghɨ yaa na le'?**
who PF do thing this how EQ
Who has done this thing how?

c. **?*Bɨ ø ghɨ eghà nâ:?**
you:PL PF do what how
How have you (pl) done what?

(ii) The use of wh-words/expressions is not restricted to main clauses, or to particular types of subordinate clause. The constraints that do apply are semantic rather than syntactic in nature: for instance, (38) is ill-formed simply because it is not possible semantically to question some element in a subordinate clause dominated by a main clause with an imperative verb form such as **tɔ**, *call*.

(38) *[**Tɔ atò**
CP IMPER:call him

[m̄bɨ'ɨ ta-a kɨ'ɨ e -ghɨ̄ eghà-â?]]
CP so:that he-F come IR-do what-Q
Call him so that he can come and do what?

It is interesting to note at this point that interrogative clauses - even those that function as main clauses - exhibit a characteristic normally associated with subordination: namely, a L-H tone pattern on the subject pronominal complex in imperfective and future tense forms, as opposed to H-L or H-M in independent clauses. This feature is seen in (39).

(39) **Bà-á ghɨ̄ aghɨ yaa na -â?**
we-F do thing this how-Q
L-H
How shall we do this thing?

A possible explanation for the presence of the L-H pattern in interrogatives is that it signals "non-assertiveness" rather than syntactic subordination per se (Givón 1979a). Most subordinate clauses are not, of course, assertions in their own right, and interrogatives are likewise non-assertive.

3.2.4 Echo, Alternative and Tag Questions

Where a question has not been heard or understood properly, an "echo question" may be formed simply by repeating the original question with the addition of **le'**, the emphatic interrogative marker, in clause final position, as seen in the dialogue (40) between speakers A and B.

(40) A **À ø ghâ:?**
you:SG PF go -Q
Where are you going?

B **À ø su ne eghà, Manyî:?**
you:SG PF say that what Manyi
What did you say, Manyi?

A **E ø su nê, À ø ghà-le'?**
I PF say that you:SG PF go -EQ
I said, where are you going?

Where a sentence expresses an "either-or" choice between two alternatives, the second alternative will be prefaced by the particle **kò**, *or*, while **-le'**, the emphatic interrogative marker, will appear in sentence-final

position. In other words, the presentation of a choice between two possibilities is treated as a kind of interrogative. The two alternatives may be encoded in the form of any two identical maximal projections (two NPs, two VPs...etc.). NP and IP categories are linked in this way in (41a) and (41b) respectively.

(41)a. **A -à ɲ-dzɨ-a [èlāŋ] kò [mèkụ]-le'?**
you:SG-IMP R-eat-IMP NP cocoyams or NP beans
Do you eat cocoyams or beans?

b. **[Ma-a tseke apfə̀]**
IP I -F stay LOC:compound

kò [ma-a ghā awen] -le', m̀bə m-bakà kô
or IP I -F go LOC:market-EQ but I-NEG:PF know
Either I shall stay at home or I shall go to market, but I don't know (which I shall do).

"Tag questions" take the invariant form **ghɨ na-â/-le'?**, literally *do how-Q/-EQ*. This form remains unchanged regardless of the verb used in the questioned clause, or the categories of person/number or the noun class membership of the actor(s) concerned. Examples are seen in (42).

(42)a. **Bɔ ø bû' me fà'a afà' yu , ghɨ na -â?**
they PF begin INC work work DEF do how-Q
They have begun to do the work, haven't they?

b. **Tà ø lô' ɲ-gà e -tsà'te a tàt vi wu,**
he PF P1 R-go IR-greet OBJ father his:REF DEF

ghɨ na -â?
do how-Q
He went to greet his father (earlier today), didn't he?

Note that a "tag question" can be added *only* to a polar (yes/no) question. If added to a wh-question, the result is unacceptable, as in English:

(43) ***Bà-a ghɨ̌ aghɨ yaa na, ghɨ na -â?**
we-F do thing this how do how-Q
**How shall we do this thing, shall we?*

Structurally, the "tag question" can best be analysed as a separate clause adjoined to the preceding one. Like many "frozen forms", however, it is defective: in this case, it appears to lack an overt subject, and the verb **ghɨ** cannot be inflected.

3.3 Negation

3.3.1 Constituent Negation

Negation of individual NP constituents is achieved by means of a Focus Construction. The NP to be negated is inserted into the postverbal Focus position, following the negative copula **ntsɛ̃**, *be not*, and is modified by a following Relative Clause expressing the main sentence predicate. This structure is illustrated in (44a/b). Note that the negated NP may in some circumstances carry overt Focus marking (44a); also that the Relative Clause is optionally introduced by the emphatic marker **ka** (44b), to be distinguished from the homophonous negative marker **ka** (see (48) below). Full details of Focus Constructions are given in 4.2.2.

(44)a. **N̄tsɛ̃ [tɔ̃ -à] [bɔ ø ye la]**
be:not NP him-FOC REL they PF see SUB
It's not him they have seen.

b. **N̄tsɛ̃ [wɔ̀t waa] [ka tà ø lɔ̂' ŋ̀-gà la]**
be:not NP person this REL E he PF P1 R-go SUB
It's not this person who went (earlier today).

Other kinds of constituent negation below clause level are rare. One instance consists of a small set of negative adjectivals/adverbials, composed of a positive form prefixed by the regular negative morpheme **ka**:

(45) **kabɔ̀ŋ** *bad/badly* ← ka + bɔ̀ŋ, *NEG + good/well*
kanè *only, except* ← ka + nè, *NEG + with*
kanâ *different, other* ← ka + ànâ, *NEG + thing*

Examples are seen in (46), where the negated items are indicated by arrows:

(46)a. **Tà-à ŋ̀-kɨ̀ -ø e- lâ e- ghɛ̃̀**
he-IMP R-want-IMP IR-really:AUX IR-do

anəa↶kabɔ̀ŋ nè yê
thing bad with you
He really wants to do something bad to you.

b. **Wɔ̀t tsa ka bê ŋ̀-gùa**
person different NEG AUX:even R-IMP:P

ǹ-dzè-a atɔ̀ kanè↷ Dzɔ̃n
R-see-IMP him except John
No-one could even see him except John.

c. Tà ø dzɨ̀ èghɨ́dzɨ́ kanà kà wu àbạ
he PF eat food different NEG be foofoo
He ate food other than foofoo.

Verbs that contain a non-overt negative eg. **ebu**, *to lack*; **ekele**, *to prevent*, and the adverbial **kekaŋ**, *in vain* (which in combination with a verb yields the sense *to do X in vain, to fail to do X*), might also be regarded as instances of constituent negation.

3.3.2 Clause (Sentential) Negation

3.3.2.1 NEG Forms

Clause negation is marked by an independent form under complex INFL. In terms of the linear order of elements, it occupies the slot between an enclitic (or phonetically null) tense-aspect marker, and an auxiliary or main verb, as illustrated in (47a).

(47)a. **Tà-à kà'à lɔ̂' ŋ̀-gà**
he-P2 NEG P1 R-go
(Yesterday) he did not go (after something else had occurred).

The linear order of elements in (47a) may be schematized as follows:

(47)b.

[S] + [TENSE:CLITIC] + [NEG] + [TENSE:AUX] + [MAIN:VERB]

We shall return shortly to the question of the structural position of NEG.

The basic form of the NEG morpheme is **ka**; but tonal distinctions, and minor segmental variations such as an echo vowel following a glottal stop (as in (47)), characterize the different aspects and tenses. The forms are summarized in (48).

(48)

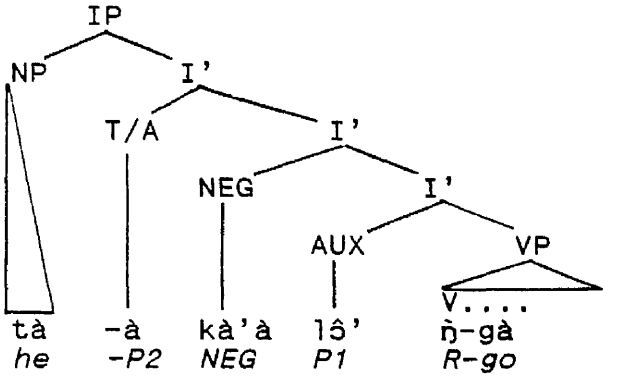
Tenseless forms:	Perfective		**bakà**
	Imperfective		**kà**
Obligational/Imperative:			**kā**
Past Tenses:	P1 Past Today		**kà**
	P2 Past Yesterday	}	**kà'à**
	P General Past	}	
	P3 Past Before Yesterday		**kā'ā**
Future Tenses	F General Future	}	**kā**
	F1 Future Today	}	
	F2 Future Tomorrow	}	
	F3 Future After Tomorrow	}	

Since the forms in (48) are independent, and immediately precede an auxiliary or main verb, the question arises as to whether they are themselves verbal. Unlike the various auxiliary verbs that mark TAM (Tense-Aspect-Modal) categories, the NEG marker cannot carry verbal affixes such as realis/irrealis or imperfective markers. It also differs from verbal forms in that it fails to trigger a realis/irrealis prefix on an auxiliary or main verb that immediately follows it: thus in (47), **kà'à** is followed by the unmarked auxiliary **lɔ̂'**, rather than by the realis form **ǹ-dɔ̀'** (see chapter 7). We might conclude from these facts that NEG forms are non-verbal - at least synchronically. However, we comment below on their possible historical derivation from verbs, and the question of their synchronic status is taken up again in 7.1.2.3.

3.3.2.2 Negative Clause Structure

In structural terms, NEG appears under complex INFL, which also marks TAM categories. Sentence (47) is then assigned the provisional structure in (49), where NEG occupies a I' adjunction position. (The labels attached to the various nodes will be modified later: see Chapters 7 and 9.)

(49)



This structure requires three further comments:

(i) Future Tenses

First, in Future Tenses, the presence of the negative marker **ká** "displaces" the preverbal Future Tense clitic **-á** to VP-final position: compare the positive sentences (50a/c) with the corresponding negative sentences (50b/d).

(50)a. **Ta-a̲ nɔ̀ŋe lob ntsɔ̰ e- ghã̀**
he-F leave house good IR-go

e- li abeme lob kabɔ̀ŋ
IR-sleep inside house bad
He will leave a good house to go and sleep in a bad one.

b. **Tà ká nɔ̀ŋe lob ǹtsɔ̰ e- ghã̀ e- li**
he NEG leave house good IR-go IR-sleep

abeme lob kabɔ̀ŋ-a̲
inside house bad -F
He will not leave a good house to go and sleep in a bad one.

c. **àben yu [tà-a̲ bene la]**
dance DEF he-F dance SUB
the dance that he will dance...

d. **àben yu [tà ka̲ bene -a̲ la]**
dance DEF he NEG dance-F SUB
the dance that he will not dance...

In (50d), the displaced Future Tense marker precedes the subordinator la: that is, it does not occupy the clause-final [Spec,CP] position, but instead attaches itself to the final element under VP.

A similar phenomenon of Future Tense displacement by a NEG morpheme is reported in Western Kru languages by Marchese (1986:208). In (51) from Klao, preverbal **mu**, *FUT*, is displaced to clause-final position by **se**, *NEG* (Marchese's example (176)):

(51)a. **ɔɔ mu dɛ cɛ**
he:INC FUT thing learn *He will learn.*

b. **ɔ sɛ̄ dɛ cɛ̃̄ mū**
he NEG thing learn FUT *He will not learn* (anything).

Marchese analyses both future and negative markers as auxiliaries. Since there is only one preverbal auxiliary position, she explains "displacement" structures such as (51b) as "the direct result of the verb-like nature of both the negative auxiliary se and the future auxiliary **mu**", adding that "all verbs in Kru may embed in a similar fashion". In Mundani, the future tense clitic -á is non-verbal (6.3); the future negative ká lacks certain verbal properties (3.3.2.1); and even if both were "verb-like", there is more than one preverbal

auxiliary position to accommodate such items side by side. So the arguments which Marchese employs to explain "displacement" structures in Kru cannot be applied to the similar structures in Mundani. We return to the question of negative future sentences in section 7.4.2.3.

(ii) Past Today (P1)

Secondly, (49) does not account for the form of P1 (Past Today) negative sentences. The P1 marker **li/ghɛ̰/lɔ̰'**, which functions as an auxiliary verb in positive constructions, may not fall within the scope of negation:

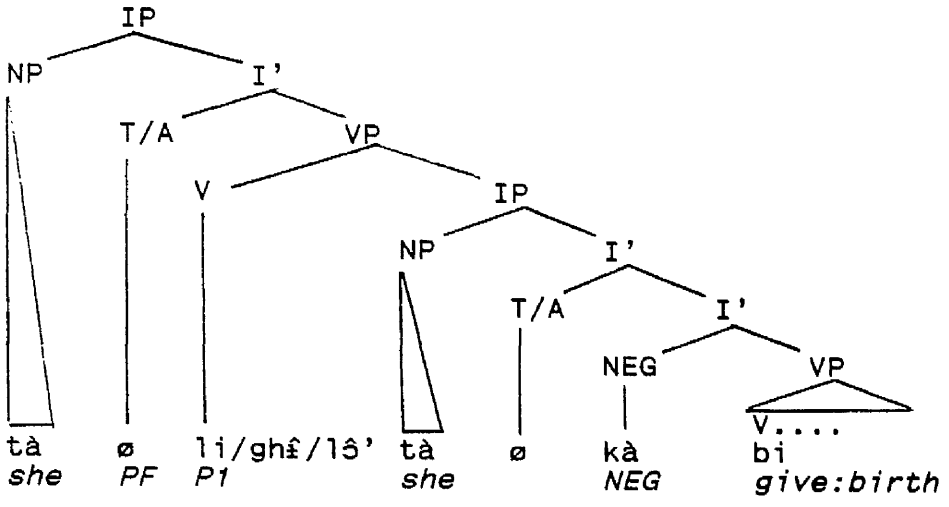
(52) ***Tà ø bakà ghɛ̰ m̃-bi**
she PF NEG:PF P1 R-give:birth
She did not give birth (earlier today).

Where a negative sense is required, the P1 tense marker is given the status of a main verb in a biclausal structure, with negation marked in the second (tenseless) clause only (53):

(53) **Tà ø li/ghɛ̰/lɔ̰' tà ø kà bi**
she PF P1 she T/A NEG give:birth
She did not give birth (earlier today).

(53) may be assigned the structure in (54):

(54)



Note that **li/ghɛ̰/lɔ̰'** used as lexical verbs can be negated in the usual way: **Bɔ bakà li**, *They have not slept*; **Bɔ bakà ghɛ̰**, *They have not done..*; **Bɔ bakà**

lɔ̂', *They have not moved/got up.* Why should these same verbs be incapable of appearing within the scope of NEG when used as tense auxiliaries? This is especially puzzling since the same restriction does not hold of Future Tense auxiliaries. For example, the F1 auxiliaries **ghɨ̄/lɔ́'ɔ** are derived, like the P1 markers **ghɨ̂/lɔ̂'**, from the lexical verbs **eghɨ̄**, *to do*, and **elɔ́'ɔ**, *to move/get up*, respectively; but the F1 auxiliaries appear readily within NEG scope. Similarly, the F2 auxiliary **sà'a** (from **esà'a**, *to wake up*), and the F3 auxiliary **li**, derived like P1 **li** from **eli**, *to sleep*, may also fall within the scope of NEG:

(55) **À** **ka** **ghɨ̄,lɔ́'ɔ/sà'a/li** **e- kɨ́' -a**
you:SG NEG F1 F2 F3 IR-come-F
You will not come (later today/tomorrow/ after tomorrow).

One can speculate that the P1 auxiliaries have been incorporated more recently into the system of tense marking than the Future Tense auxiliaries, and thus retain to a greater degree the behaviour patterns of independent lexical verbs. In sentences such as (53), **li/ghɨ̂/lɔ̂'** signals tense, but at the same time functions as [Head,VP] in an independent clause dominating a negated clause. A similar structure may underlie Future Tense sentences like (55); but in this case NEG is raised to the higher clause, by negative transportation, resulting in the eventual fusion of two clauses into one. (For a summary of studies of negative transportation, see Horn 1978.)

(iii) Tenses P, P2, P3

In negative Past Tenses P/P2 and P3 (but not in P1) an alternative structure to (49) is optionally available, in which not only the subject but also the NEG element is recapitulated. Examples are seen in (56).

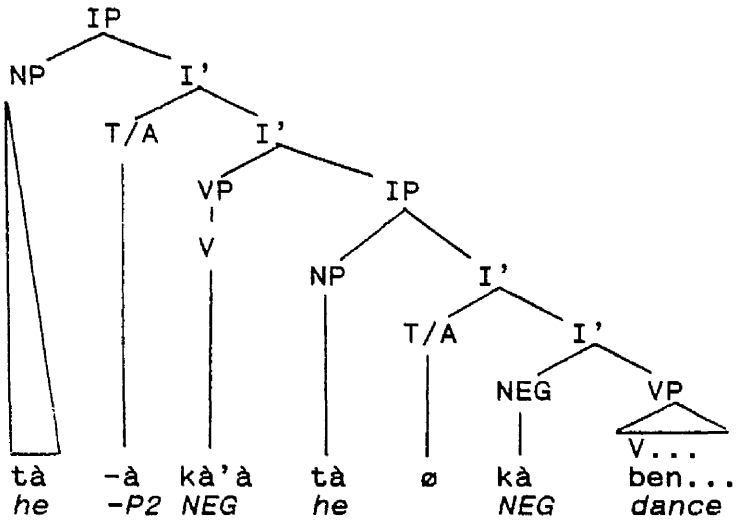
(56)a. **Tà-à** **kà'à** **tà ø** **kà** **ben**
he-P/P2 NEG:P/P2 he T/A NEG dance
He did not dance (sometime in the past/ yesterday).

b. **Ŋgab yu lè ka'a**
antelope DEF P3 NEG:P3
c9 c9

è kà wua ø-fà -a
it NEG IMP(P) R-be:big-IMP
c9
The antelope was not big.

This complex negative sentence structure is reminiscent of that observed by Asongwed in Ngamambo, a Grassfields Bantu language of the Mbam-Nkam subgroup (Asongwed 1980). Asongwed argues that in Ngamambo, negative constructions derive from at least two underlying sentences. A similar derivation for the Mundani sentences in (56) would depend crucially on the claim that the Past Tense negative marker **ka'a** is in some sense verbal (even if it has lost its verbal properties in the present state of the language), and is thus able to occupy the [Head, VP] position in the higher clause. (56a) would then be assigned the structure in (57):

(57)



So a negative P/P2/P3 sentence is optionally biclausal, with tense marked in the higher clause only, as in biclausal P1 sentences; but whereas in Tense P1 it is the tense marker that occupies the [Head,VP] position in the upper clause, with negation appearing in the lower clause only, in biclausal negative P/P2/P3 sentences, the Past Tense negative morpheme **ka'a** occupies the upper [Head,VP] position, and negation is repeated in the lower clause.

Let us now compare the three types of negative sentence structure presented above. Taking them in the order (54), (57), (49), we have the following linear sequences:

(58)a. S - [PF:ASPECT] - [PAST:TENSE: AUX (P1)] - S - [NEG (unmarked)] - V

b. S - [PAST:TENSE (P/P2/P3)] - [NEG (marked for Past T)] - S - [NEG (unmarked)] - V

c. S - [TENSE/ASPECT] - [NEG (marked for T/A)] - [TENSE:AUX] - V

We can hypothesize that these three structures represent stages in the development of negative sentences in the language. (58a) is a biclausal sentence where the tense marker has full verbal status in the higher clause, and negation is signalled in the lower clause only, by a form unmarked for tense. In (58b), there is again a biclausal form, but the tense marker has lost its verbal status, becoming encliticized onto the final element of the subject NP, and thus leaving the verb position in the upper clause available for a negative form (presumably a verb of some sort) that is marked for tense. Non-tense marked negation remains in the lower clause, resulting in double NEG marking. In (58c), the non-verbal NEG marker in the lower clause has been raised by a process of Negative Transportation to the upper clause, where it is marked for Tense-Aspect features. Since neither the negative morpheme nor the Tense-Aspect marker has verbal status, the upper [Head,VP] position is empty and thus available for verb movement from the lower clause. With both NEG and V moved out of the lower clause, the latter is suppressed altogether, resulting in a monoclausal structure. In the present state of the language, this monoclausal structure is the norm for negatives in all Tenses and Aspects except Tense P1, where a two-clause structure is required.

3.3.2.3 Double Negatives

The P/P2/P3 sentences in (56), schematized in (58b), show that negation may be marked twice in a given sentence without cancellation of the negative sense: in other words, the double NEG marking does not result in a (weakened) positive sense, as it frequently does in English. Instead, as a comparison of (59a) and (59b) reveals, the double negation actually reinforces the negative meaning:

(59)a. **Ŋgab yu le ka'a wua ø-fà -a**
antelope DEF P3 NEG:P3 IMP(P) R-be:big:-IMP
The antelope was not big.

b. **Ŋgab yu le ka'a è kà wua ø-fà -a**
antelope DEF P3 NEG:P3 it NEG IMP(P) R-be:big-IMP
The antelope was (definitely) not big at all.

(59a) is the regular monoclausal negative form, with single NEG marking and a non-emphatic negative reading. (59b), the alternative biclausal structure with double NEG marking, will receive a more marked, emphatic negative reading: *definitely not big*, or *not big at all*. Whereas the parallel English sentence *The antelope was not not-big* would receive the (somewhat weakened) positive interpretation *The antelope was rather big*, a positive reading for (59b) is disallowed in Mundani.

The fact that double negation does not cancel out negative meaning is seen also in frequent examples where a "covert" negative (for example, a negative verb) co-occurs with overt negative marking:

(60) **Bɔ̀ le wua ŋ̀-kɨ̀ -a e- kele atò nê,**
they P3 IMP(P) R-want-IMP IR-prevent him that

tà ø ka sà awɔb
he OBL NEG leave them
They wanted to prevent him from leaving them.

In (60), the covert negative contained in the verb **ekele**, *to prevent*, is followed by overt negative marking **ka** in the embedded clause; but the only available reading of *leave* is the negative one ie. they tried to make him *not-leave*.

In seeking to account for such cases of negative reinforcement (or "paratactic negation", as it is sometimes called in the literature), we note that in both (59b) and (60), the second clause is expressed as if it were an independent sentence: **È kà wua fàa**, *It was not big*; **Tà ka sà awɔb**, *He should not leave them.* Apart from the anaphoric subject and object pronominals, these clauses take no account of what has preceded them, and thus contain overt negative marking just as if no negative marking had appeared in the preceding clause.

3.3.2.4 Negative Obligationals

Obligationals correspond to what Marchese (1986) terms "imperatives". She uses the term "imperative" "...to refer to subjunctive or hortative actions, whether referring to second or non-second persons." (p.180)

Applying this definition to Mundani obligationals, examples of positive/negative forms are given in (61).

(61)

	Person	Pos.Obl.	Gloss	Neg.Obl.
sg	1	**ŋ̀ kɨ́'ɨ́**	*I should come*	**ŋ̀ ká ŋ̀-kɨ̀'ɨ̂**
	2	**à kɨ́'ɨ́**	*You should come*	**à ká ŋ̀-kɨ̀'ɨ̂**
		kɨ́'ɨ́	*Come. (sg)*	**ká ŋ̀-kɨ̀'ɨ̂**
	3	**tà kɨ́'ɨ́**	*He should come*	**tà ká ŋ̀-kɨ̀'ɨ̂**
pl	1	**bà kɨ́'ɨ́**	*We should come*	**bà ká ŋ̀-kɨ̀'ɨ̂**
	2	**bɨ̀ kɨ́'ɨ́**	*You should come*	**bɨ̀ ká ŋ̀-kɨ̀'ɨ̂**
			Come. (pl)	
	3	**bɔ̀ kɨ́'ɨ́**	*They should come*	**bɔ̀ ká ŋ̀-kɨ̀'ɨ̂**

The negative obligational is formed by inserting high-tone **ká** immediately before the verb. The verb carries a homorganic, low-tone nasal prefix which triggers certain tonal perturbations on the stem. These negative obligational verb forms are identical to the forms of consecutivized verbs carrying a nasal realis prefix (see chapter 8). In semantic terms, however, it seems highly unlikely that realis marking would appear in obligational forms that are inherently irrealis (unrealized). We suggest that the nasal prefix here is not realis marking, but a nominalizer. The homorganic nasal has a nominalizing function elsewhere in the language, as the following examples show[5] :

(62)a. **eghɔ̨̀ɔ̨̀ne** → **ŋ̀-gɔ̨̀ɔ̨̀na**
to be sick *sick person, patient*

b. **elɨ̀'a** → **ǹ-dɨ̀'**
to annoy, *stubbornness, strong-headedness*
to disturb

c. **ekààne** → **ŋ̀-kàànè**
to argue *argument, competition*
to compete

d. **elɥɥ** → **ǹ-duuma**
to bite *mosquito*
to sting

Evidence from other West African languages supports our "nominalizer" hypothesis. Marchese (1986:191) notes that in several Western Kru languages, the verb *stop* is used to negate imperatives/obligationals, followed by a nominalized form of the main verb. (63) is an instance from Bassa (Marchese's example (115)):

(63) **ɓɔ kùà nyu-ɛ** *Don't work.*
stop work do -NOM

In contrast to Kru, it has proved impossible in Mundani to trace etymological links between the obligational (or any other) negative marker and full verbs. There are, however, some structural pointers to the verbal origin of NEG markers, such as the Past Tense negative construction illustrated in (56). If we accept the possibility that NEG morphemes may derive from full verbs, then the negative obligational might be said to follow the same pattern as Western Kru, with a verb-like form functioning as negator (NEG:V1), followed by a nominalized form of the main verb (NOM:V2), as follows:

(64) S - [NEG:V1] - [NOM:V2 (OBL)]

CHAPTER 4 - CLAUSE STRUCTURE (2)

4.0 Introduction

This chapter continues the outline of clause structure begun in Chapter 3. Section 4.1 surveys the characteristics of embedded clauses. The most salient markers of embedded status, summarized in 4.1.1, are complementizers/conjunctions, a distinctive tone pattern in the Future and Imperfective, and the subordinating particle **la**. Three types of non-finite embedded clause are presented in 4.1.2: consecutivized clauses, non-finite complement clauses and participial relative clauses. The brief summary of the properties of consecutivized clauses provides an introduction to the fuller discussion and analysis of such structures in Chapters 8 and 9. Section 4.2 turns to cases of deviation from basic constituent order found in Topic and Focus constructions (4.2.1 and 4.2.2). The analysis of these configurations draws on ideas developed by Tuller (1989) in the study of postverbal Focus in Chadic languages.

4.1 Embedded Clauses

An embedded clause is defined as one that cannot stand alone in semantic terms: that is, it makes sense only in relation to an independent clause which it expands or modifies in some way.

4.1.1 Markers of Embedded Clauses

In Mundani, embedded clauses have the same basic order of constituents as main clauses ie. SVO. There is no verbal morphology that signals the subordinate status of a clause at a general level, although certain specific types of embedded clause have their own morphology: for example, the verb suffix **-á** *hypothetical* appears in the antecedent clause of a hypothetical conditional (1a), while realis/irrealis verb prefixes mark consecutivized clauses (1b).

(1)a. **[N-dze-á fǫ],** **ko** **ma-a lùùla.**
I-see-HYP buffalo COND I -F run:away
If I saw a buffalo, I would run away.

b. **Ta-a kɨ'ɨ [e- tsekasi] [e- dzɨ èghɨdzɨ bi].**
he-F come IR-sit:down IR-eat food his:REF
He will come and sit down and eat his food.

Pronoun forms in embedded clauses are likewise identical to those used in main clauses.[1]

Despite their similarities, a number of features distinguish matrix from embedded clauses. For example, the range of tense-aspect forms available to embedded clauses is restricted in various ways, particularly in conditional clauses (Parker 1991a). In addition, the majority of embedded clauses will be marked overtly in one of the following ways:

(i) - a complementizer or conjunction in clause-initial position;

(ii) - exceptional tone-marking on the subject pronominal complex;

(iii)- the general marker of subordination **la** (SUB) in clause-final position.

Each of these formal markers will be considered briefly.

4.1.1.1 Complementizers and Conjunctions

Finite clausal complements that function in the place of an NP argument of the matrix predicate are marked by one of two complementizers: **nê**, *that*, or **ǹdɨ**, *how*, in clause-initial position.

(2)a. **Tà ø (su) [nê, à ø ka ŋ- gà.]**
he PF (say) CP that you:SG OBL NEG NOM-go:IMPER
He says that you should not go.

b. **Màlià nà -à ŋ-kpà't-à [ǹdɨ yè -a**
Mary PROG-IMP R-plan -IMP CP how LOG-F

lɔ̀'ɔ lạạ akɨŋ la]
F1 cook cooking:pot SUB
Mary is planning how she will cook a meal (later today).

There are other types of embedded clause that do not function in the place of an NP argument, but instead modify or elaborate on the main clause. Clauses of this modificatory type are in certain cases marked in initial position by a conjunction eg. **m̀bɨ̀'ɨ**, *in order that (not)* signals purpose; **na**, *because* signals reason:

(3)a. **Tɔ atò [m̀bɨ̀'ɨ ta-a kɨ'ɨ**
call:IMPER him CP so:that he-F come

e- dzɨ èghɨdzɨ bi]
IR-eat food his:REF
Call him so that he will come and eat his food.

b. **Me- ko awê**
INC-take:care yourself:SG

[na à -a kpene abeme ebɨ la.]
CP because you:SG-F fall inside hole SUB
Take care, because you may fall into a hole.

In addition to simple forms such as **m̀bɨ'ɨ** and **na**, there is a range of complex conjunctions, one component of which is selected from the set **nê, ǹdɨ, na**. Examples are seen in (4).

(4)a. **Tɔ Lukàs tà ø kɨ'ɨ,**
call:OBL Luke he OBL come

[m̀bɨ'nê tà bakà wu asi,
CP because he NEG:PF be present

bà ka ko ǹ-tsɔ̀'tè ànəa ŋgaa].
we NEG know R-settle matter that
Call for Lukas to come, because if he is not present, we shall not be able to settle that matter.

b. **A -a lɔ̀'ɔ à ø lạạ akɨŋ**
you:SG-F F1 you OBL cook cooking:pot

[ǹdɨwu à bakà bɔ afà' la.]
CP since you NEG:PF have work SUB
You should cook a meal, since you don't have any work.

c. **Bɨ ø ka ŋ- gà èwen afɨ' yaa,**
you:PL OBL NEG NOM-go:IMPER market LOC:time this

[ŋkààna m̀bɨŋ nà -à ŋ-kɨ -ø e- lu la.]
CP since rain PROG-IMP R-want-IMP IR-rain SUB
You shouldn't go to market now, since rain is threatening to fall.

A form such as **m̀bɨ'ɨnê, ǹdɨwu** or **ŋkààna** acquires a meaning distinct from the meanings of its component parts. We therefore consider such forms to be true compound conjunctions, and not a sequence of, for example, conj. + complementizer, or two conjunctions. We then observe that, of the set of complementizers and conjunctions (whether simple or compound), only one form may appear in a given embedded clause. We assign this complementizer or conjunction to the head C of CP (see the diagrams in (9) below).

4.1.1.2 Tone Pattern on the Subject Pronominal Complex

The basic forms of subject pronouns are frequently combined with a preverbal tense or aspect clitic marker

(7.1.1). Where this occurs in the data, the tense-aspect clitic is separated from the pronoun proper by a hyphen eg. **yè-a** in (2b); **à-a** in (3b).

The forms of these preverbal tense-aspect clitics are set out in (5):

(5)

Imperfective	-a
Tense P3	-le
Tense P2/P	-à
Future Tenses	-ā

The distinction between the Imperfective and Tense P2/P is maintained in the verb forms, notably by the presence of a realis prefix and an agreement suffix on imperfective verbs (6.1.1). The clitic marking Future Tense in positive clauses is mid-tone **-ā**; but in the negative it is displaced to clause-final position, where it surfaces with a H tone, and no longer forms a part of the subject pronominal complex (3.3.2.2). In third person plural pronoun forms, the vowel of the tense-aspect clitic (except **-le**) assimilates to the preceding root vowel: **bɔ-à** → **bɔ-ɔ̀**.

Most subject pronouns in embedded clauses are identical to those occurring in the corresponding independent clauses. In certain embedded clause types, however, in the imperfective and in future tenses, the subject pronominal complex differs in tonal pattern from its counterpart in an independent clause. Contrast the forms in (6a) and (6b).

(6)a. Tone patterns on the subject pronominal complex in independent clauses

TNS/ASP	PERSON	SG		PL	
IMP	1	má-à	H-L	bá-à	H-L
	2	à-à	L-L	bɨ́-à	H-L
	3	tà-à	L-L	bɔ́-ɔ̀	H-L
F (POS)	1	má-ā	H-M	bá-ā	H-M
	2	á-ā	H-M	bɨ́-ā	H-M
	3	tá-ā	H-M	bɔ́-ɔ̄	H-M

b. Tone patterns on the subject pronominal complex in certain embedded clause types

TNS/ASP	PERSON	SG		PL	
IMP/F (POS)	1	mà-á	L-H	bà-á	L-H
	2	à-á	L-H	bɨ̀-á	L-H
	3	tà-á	L-H	bɔ̀-ɔ́	L-H

The "overlay" L-H tone pattern on the subject pronominal complex in (6b) can be taken to be a signal of dependent (embedded) status. This marker of dependency is restricted in two ways, however:

(i) The L-H overlay is limited to Imperfective and Future Tense clauses. Thus P2/P subject pronoun forms, which are homophonous with imperfective forms in independent clauses, do *not* carry a L-H pattern in embedded clauses, where they may be readily differentiated from the imperfective forms.[2]

(ii) The L-H pattern is confined to a limited set of clause types. These are summarized in column B in (7). In contrast, clause types where *no* L-H tone occurs on the subject pronominal complex in the Imperfective and Future are set out in column A.

(7) Tone Patterns on the Subject Pronominal Complex

A (tone varies) independent	B L-H dependent
Clauses introuced by *nê*	Clauses introduced by *ǹdɨ*
	Clauses introduced by *na*
Clauses introduced by any marker that is a compound of *nê*: *ŋgunê*, *m̀bɨ̀'ɨ̀nê*, or *ŋ̀kàànê*	Clauses introduced by any marker that is a compound *of ǹdɨ* or *na*: ǹdɨwu, ŋgùndɨ, wundɨ, ŋ̀kààndɨ, m̀bɨ̀'ɨ̀ndɨ, m̀bɨ̀'ɨ̀na, or *ŋ̀kààna*
	Relative clauses
Purpose clauses introduced by *m̀bɨ̀'ɨ̀* or *nê*	Adverbial clauses introduced by *m̀bɨ̀'ɨ̀*
	Adverbial clauses of time or circumstance (other than those introduced by *m̀bɨ̀'ɨ̀*)
Consequence clauses in conditional sentences	Antecedent clauses in conditional sentences
All true independent clauses that are non-interrogative	Interrogative clauses

At this point we shall make only three comments on (7); there is a more detailed discussion in Parker 1991:204-207.

Firstly, the presence of interrogative clauses in column B is unexpected, since the majority of interrogative clauses are clearly independent semantically and syntactically. A possible explanation, already advanced in 3.2.3, is that the L-H tone overlay signals "non-assertiveness" rather than syntactic embedding *per se* (Givón 1979a). Nevertheless, the strong correlation between the L-H pattern and other markers of embedded status does suggest that it is useful to regard it as one diagnostic of syntactic embedding, even if it has a wider application outside the domain of syntax, in terms of kinds of speech act.

Secondly, the absence from column B of the consequence clause in a conditional sentence is not too surprising. An example is given in (8):

(8) ANTECEDENT
[Tà -á e- sà'a e- ghã ewen], ko/m̃bə
she-F IR-F2 IR-go market COND
L-H

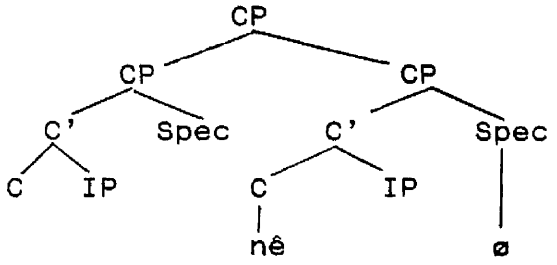
CONSEQUENCE
[tá -ā e- yụ̀ụ̀ èghɨ́ bi].
she-F IR-buy things his:REF
If she goes to market (tomorrow),
she will buy her things.

In (8), the antecedent clause precedes the consequence clause. The marker **ko** or **m̃bə**, although immediately preceding the consequence clause, is not an essential part of it: speakers pause not only before **ko/m̃bə**, but also (although less emphatically) after it, and the marker is in any case optional. We may thus regard **ko/m̃bə** not as consequence markers, but as markers of the conditional relationship existing between antecedent and consequence clauses. The consequence clause, then, is not introduced by any kind of conjunction, and can stand alone. The antecedent clause, however, cannot normally stand on its own, and in this example its dependence is encoded in the L-H tones on the subject pronominal complex in the Imperfective and Future.

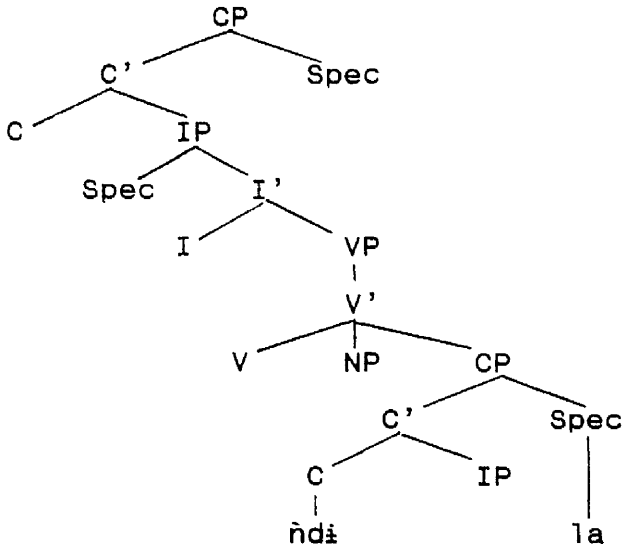
The third remark concerns the omission from the list of clause types displaying a L-H tone pattern of complement clauses introduced by **nê**, *that*, and all clauses intruduced by a complex conjunction that has **nê** as one of its components. Unlike the complementizer **ñdɨ́**, *how*, **nê** is separated from a following clause by a noticeable pause

(by a comma in written texts). This fact suggests that **nê** is not considered a part of the complement clause at all, and that in semantic terms the latter functions as an independent clause in its own right. In other words, **nê** links two independent clauses in a compound relationship, and may be called a "compound marker".[3] The clause preceded by **nê** therefore has no semantic dependency to be reflected in syntactic markers such as the L-H tone overlay. In contrast, **ǹdɨ**, *how*, *is* a complementizer, introducing a clause that displays the L-H pattern on the subject pronominal complex and the clause-final subordinator **la** characteristic of syntactic embedding. The contrast between the two syntactic structures is seen in (9a/b).

(9)a. Clausal compounding (nê)



b. Clausal complement (ǹdɨ)



Unlike **nê** clauses, clauses introduced by a complex conjunction that has **nê** as one of its components *are* semantically dependent; but the influence of **nê** means that this semantic dependency is not reflected in the syntax

ie. in the L-H pattern normally associated with embedded clauses in the Imperfective and Future.

4.1.1.3 The Subordinator *la*

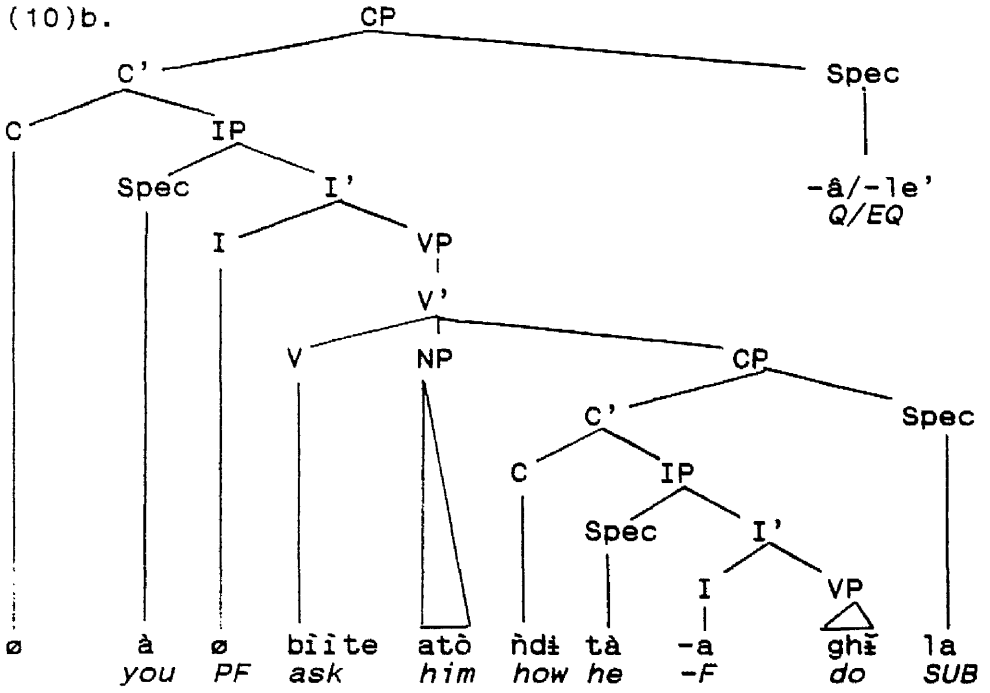
Many clause types are characterized by a particle **la** in final position, in all tense-aspect forms.

The occurrence of this particle coincides with the presence of the L-H overlay tone pattern in the Imperfective and Future, in all but the last three clause types listed under B in (7). The particle **la** is absent, however, from all the clause types in column A. This pattern of distribution in relation to the L-H overlay indicates that la is a marker of syntactic dependency; that it works together with the L-H tones to signal the embedded (subordinate) status of the clause in which it occurs. The absence of **la** in adverbial clauses of time and circumstance (except those introduced by **m̀bɨ̀'ɨ̀**, *as*), in the antecedents of conditionals, and in interrogatives, is not understood at this stage in the research.

The subordinator **la** is assigned to the specifier position of its own clause (CP), as already seen in (23), Chapter 3, repeated here as (10):

(10)a. **À ø bìɨte atò [ǹdɨ́ tà-a ghɨ̃ la]-â/-le'.**
you:SG PF ask him CP how he-F do SUB -Q/-EQ
Have you asked him what he will do?

(10)b.



4.1.2 Non-finite Embedded Clauses

All embedded clause types considered so far have finite verb forms. There are in addition three types of non-finite embedded clause: consecutivized clauses, non-finite complement clauses, and participial relative clauses. Since none of these types has an overt (lexical) subject, the L-H tone overlay cannot surface, and only the participial relative is closed by the subordinator **la**.

4.1.2.1 Consecutivized Clauses

The consecutivized construction consists of a series of two or more clauses that share a common subject and a common tense-aspect specification. The subject and tense-aspect category are expressed overtly only in the first clause in the series. Non-initial clauses have null subjects and are tenseless (non-finite). Each verb after the first carries a prefix which has a triple function: it serves as a marker of the consecutivized clause type; it signals "same-subject", but without indicating any features of person, number or noun class membership; it also distinguishes between realis and irrealis modal categories. The realis prefix (R) is a homorganic, syllabic nasal consonant carrying L tone: **N̄-** (11a)[4]; the irrealis prefix (IR) is a mid vowel with a mid tone: **ē-**

(11b). In (11), each consecutivized unit is enclosed in square brackets.

(11)a. **Tà lè kɨ'ɨ [ǹ-tsèkê][ǹ-dzɨ̀ èghɨ́dzɨ́][ǹ-dɔ̀'][ŋ̀-gà].**
he P3 come R-sit R-eat food R-then R-go
He came, sat down, ate food, then left.

b. **Ta-a kɨ'ɨ [ē- tseke][ē- dzɨ̀ èghɨ́dzɨ́]**
he-F come IR-sit IR-eat food

[ē- lɔ̀'ɔ][me-^{5}ghā]
IR-then INC-go
He will come, sit down, eat food, then be leaving.

There will be no further discussion of consecutivized structures at this point. The reader is referred to chapters 8 and 9 for a thorough description, including evidence for the full clausal status of the consecutivized units and for the fact that they are embedded rather than main clauses, plus a comparison of two possible syntactic analyses of consecutivized clause sequences.

4.1.2.2 Non-finite Complement Clauses

Complement clauses may be finite, as in the case of those introduced by **ǹdɨ́**, *how*, or non-finite. Non-finite clausal complements are of two types: infinitival (12a), and those with a nominalized verb form (12b). Both types have a null subject element which is obligatorily coreferential with the subject of the main predicate.

(12)a. **Ta-à ŋ̀-kɨ̀' -ø [ē- ye awɔb].**
he-IMP R-want-IMP IR-see them
He wants to see them.

b. **Tà ø bû' [a mànkpa'ta menə̀ mi.]**
he PF begin planning affairs his:REF
He began to plan his affairs.

(12a) has precisely the same form as irrealis consecutivized clauses (compare 11b). Note that the irrealis verb form used in consecutivized structures is in fact the infinitive (and citation) form of that verb eg. **ē-tseke**, *to sit*; **ē-yé**, *to see*. There is a difference between the consecutivized clause and the infinitival clause, however. The former is not a complement clause in the narrow sense in which we have defined this term ie. it does not function in the place of an NP argument of the main predicate; the infinitival clause, on the other hand, *does* satisfy our definition of a complement - for example, in (12a) it takes the place of an NP object of the verb

ŋkɨ̀, *want*. This distinction suggests that different syntactic analyses may be appropriate for consecutivized and infinitival clauses respectively. The infinitival clause might be assigned a structure along the lines of (9b); the syntax of the consecutivized clause is examined in Chapter 9.

In (12b), the embedded clause again takes the place of the NP object of the matrix verb **bû'**, *begin*, so the structure is analysed along the same lines as (12a). In (12b), however, the verb **ekpà'te**, *to plan*, in the clausal complement has been replaced by a nominalized form **mànkpa'ta**, *planning*, preceded by the H-tone particle **á**, functioning as complementizer. The identity of this particle is uncertain, but it seems likely on cross-linguistic grounds to be the general locative marker **á**.

Note that different matrix predicates have different selectional properties with respect to clausal complements: so (13a/b) are ungrammatical, since **ekɨ̀**, *to want*, cannot select a nominalized complement, and **ebù'u**, *to begin*, cannot select an infinitival complement (although (13b) can be saved by replacing the irrealis-infinitival prefix **ē-** by the incompletive form **me-**, a prefix that, like irrealis **ē-**, occurs frequently in consecutive clause sequences).

(13)a. ***Ta-à ŋ̀-kɨ̀ -ø [a màndzea awɔb]**
he-IMP R-want-IMP CP seeing them
He wants seeing them.

Tà ø bû' [*ē-/ me- kpà'te menə̀ mi]
he PF begin CP IR-/INC-plan affairs his:REF
He began to plan his affairs.

4.1.2.3 Participial Relative Clause

A full finite relative clause (14a) can be replaced by a reduced relative clause with a null subject, and a tenseless (non-finite) participial form of the verb (14b). This type of relative clause reduction is possible only in the Imperfective or Progressive. The clause-final subordinator **la** remains in the reduced clause.

(14)a. **..bòt bu [bɔ̀ le wua ŋ̀-kɨ́' -â**
people DEF REL they P3 IMP(P) R-come-IMP

adzi'a èvə lu la]
LOC:place:of death DEF SUB
..the people who were coming
to the death celebration.

b. **...bòt bu [ŋ̀-kɨ́' -â adzi'a èvə lu la]**
people DEF REL R-come-IMP LOC: death DEF SUB
place:of
..the people coming to the death celebration.

4.1.3 tê, ká, kà

A final comment is required on clauses introduced by the conjunctions **tê**, *until*, **ká**, *before*, and **kà**, *without*.

Note first that these items cannot take a simple NP complement, and thus are not prepositions: ***tê adzi'a ŋgaa**, *until that place*; ***ká vi vi**, *before his wife*; ***kà tɔ̀-à**, *without him*.

Their use as conjunctions is illustrated in (15) to (17).

(15)a. **Bɔ̀ ø bû' me -tu [tê me- kɨ́'ɨ́ adzi'a kɔ̃]**
they PF begin INC-dig until INC-come LOC:place INDEF
They began to dig until they reached a certain place.
(Lit:..until reaching a certain place.)

b. **Abə me- kpela àkpẹ nyą̀ yu [tê a mî]**
dog INC-chew bone meat DEF until it be:finished
Dog kept chewing the meat-bone until it was finished.

(16)a. **Tà lè ghɛ̃ na [ká m̀-bɔ èkab]-â?**
he P3 do how before R-have money -Q
How did he get rich?
(Lit: How did he do before having money?)

b. **Tà lè ghɛ̃ na [ká vi vi ø bɔ èkab]-â?**
he P3 do how before wife his:REF PF have money -Q
What did he do to make his wife rich?
(Lit: How did he do before his wife had money?)

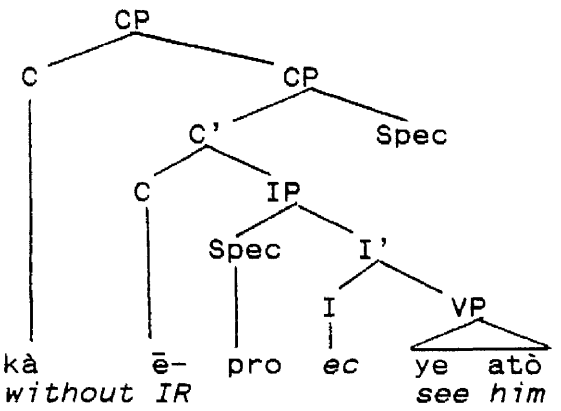
(17)a. **Ñ-de gha a ntɔ' Fɔ̧ [kà e- ye atò]**
I-P3 go LOC palace (of) chief without IR-see him
I went to the Chief's palace without seeing him.

b. **Ñ-de gha a ntɔ' Fɔ̧**
I-P3 go LOC palace (of) chief

[kà tà ø wu kô]
without he PF even know
I went to the Chief's palace without him
even knowing. (Lit:...without he even knew.)

In the (a) sentences above, the conjunction **tê/ká/kà** is inserted into a consecutivized clause sequence, and is followed immediately by the realis/irrealis prefix that is the normal marker of the consecutivized clause. In the (b) sentences, the clause introduced by **tê/ká/kà** has a lexical NP in subject position. That is, the (a) sentences are "same-subject" structures with a non-finite embedded clause; the (b) sentences are "different-subject" structures with a finite embedded clause. We shall argue in Chapter 9 that realis/irrealis marking occupies the head of CP (C) at S-structure. Taking the (a) sentences into account, this would leave only the [Spec,CP] position available to **tê/ká/kà**. If [Spec,CP] is to the right of IP, however, as we have assumed so far, **tê/ká/kà** would surface in the wrong position in the linear order of elements. Also, it is unclear why this subset of conjunctions should belong in the Spec position while others belong in the head position. For these reasons, it is suggested that they be assigned to a higher adjunction position, as in the (simplified) structure in (18). Further details of this analysis are given in 9.3.3.

(18)



4.2 Topic and Focus

All clause types considered so far, whether matrix or embedded, adhere to the basic SVO constituent order. Deviations from this order are seen in Topic and Focus constructions.

4.2.1 Topicalisation

4.2.1.1 Extraction to Clause-initial Position

An NP or locative/temporal phrase may be extracted from its normal linear position to occupy a clause-initial

TOPIC position. (19a/b) show extraction of an NP object and a temporal phrase respectively. The extraction sites are marked with a *t* (=trace). A VP constituent may not be topicalised (19c).

(19)a. **[Àkatè yu]$_i$ è ø ŋa *t*$_i$ tɔ̀ -à.**
NP letter DEF ds PF give him-FOC
The letter was given by him.

b. **[Afɨ'a m̃bɔŋ]$_i$, tà ø kua akpèn *t*$_i$**
TEMP LOC:time that he PF return behind
At that time, he turned back.

c. ***[Nyi apfəa wɔ̀dzũŋ wu]$_i$**
VP enter LOC:compound:of elder DEF

tà ka *t$_i$ a/*ghɨ̀-a.
he NEG F/ do -F
Enter the elder's compound he will not do.

(19a) is also an example of a Focus construction, since the subject NP appears in the postverbal FOCUS position, where it is marked morphologically for Focus, while the regular preverbal subject slot is filled by a "dummy subject" (ds). This structure will be discussed further in 4.2.2.

In (19b) the topicalised temporal phrase is separated from the following clause by a noticeable pause, reflecting its looser relationship with the clause as an optional adjunct rather than an obligatory argument of the verb.

The VP topicalisation in (19c) is totally unacceptable and cannot be saved even by a pro-verb such as *do*.

In the acceptable (19a/b), there is no pro-form copy of the moved Topic element. In contrast, extraction of a subject NP leaves behind a pronominal copy agreeing in number and noun class with the moved element, as in (20); if it were not so, any movement would be vacuous and difficult to prove.

(20) **[Bènyi'ta bu]$_i$ e$_i$ ø bû'**
NP teachers DEF they PF begin
c2 c2 S,c2

ǹ-da me- tsə̀ə̀te atɔ̀
R-really INC-insult him

The teachers, they began really to insult him.

If we assume that the preverbal subject position ie. [Spec,IP] is the default TOPIC position, then movement of the NP subject out of [Spec,IP] to a higher position can be said to be used (optionally) to emphasize the subject Topic role. Topic structures, then, exhibit a certain subject-object asymmetry, in that subjects leave behind a copy while objects do not.

In terms of syntactic structure rather than grammatical roles, both complements and adjuncts are in principle available for extraction to TOPIC position; but there are important constraints on such movements. These are described in section 4.2.1.3.

4.2.1.2 Identifying the TOPIC position

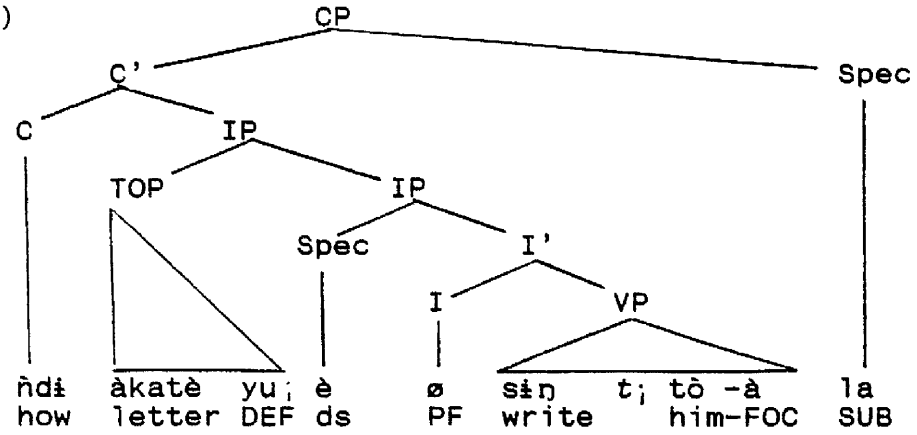
It might be assumed in many languages that the landing site for moved Topics is [Spec,CP]. However, this is clearly not so in Mundani, where [Spec,CP] is right-branching and therefore clause-final (3.1.4). Neither can the head of CP (C) be the TOPIC position, since a topicalised expression may appear in an embedded clause with a complementizer (21), and C cannot host more than one item. In such sentences, the complementizer precedes the Topic in the surface string, indicating that the latter occupies an IP adjunction position:

(21) **Tà ø ko [ǹdɨ [àkatè yu;**
he PF know CP how IP letter DEF

[è ø siŋ *t*; tò -à la]]]
IP ds PF write him-FOC SUB
He knows how the letter was written by him.

The embedded clause in (21) may be assigned the provisional structure (22). This structure will be modified later to take account of the focussed NP (section 4.2.2.2).

(22)



In (22), the moved NP **àkatè yu** is governed at D-structure by the verb **sɨŋ**, from which it receives an internal theta-role and ACCUSATIVE Case. Assigned the feature [+TOPIC], it is obliged to raise to the nearest TOPIC position. The landing site for the moved element, an IP adjunction position, can receive neither theta-marking nor Case, so neither the Theta Criterion nor the Case Filter is violated. The movement does not violate subjacency either, since only one bounding node (IP) is crossed. The NP trace is theta-governed at S-structure by **sɨŋ**, and so is properly licensed.

Note that the type of movement described here is similar to wh-movement in other languages eg. English, in that it forms an A-bar chain, with Case assigned at the foot of the chain but not at its head.

4.2.1.3 Constraints on Topicalisation

The most obvious constraint on Topicalisation is also a universal one: namely, that only [+definite] expressions may appear in the TOPIC position. Indefinite expressions are unacceptable as Topics, as illustrated in (23):

(23) ***[Àkatè/ Àkatè akõ] è ø ŋa tò -à**
NP letter/letter INDEF ds PF give him-FOC
A letter/A certain letter was given by him.

This property of definiteness is of course a correlate of the function of Topics, to encode information that is already known or presupposed.

A second constraint concerns adjunct phrases. A locative or temporal adjunct headed by the general locative marker

á- can be topicalised freely (24a/b). An adjunct phrase headed by a preposition, however, or an adverbial of manner, cannot be moved to the TOPIC position (25a/b).

(24)a. **[Adzi' yaa]$_i$, ba-a fàáne *t*$_i$**
LOC LOC:place this we-F part
Here we shall part/go our separate ways.

b. **[Alia gàme]$_i$, ñ de wua ñ-tsèk -â**
TEMP LOC:day every I P3 IMP(P) R-remain-IMP

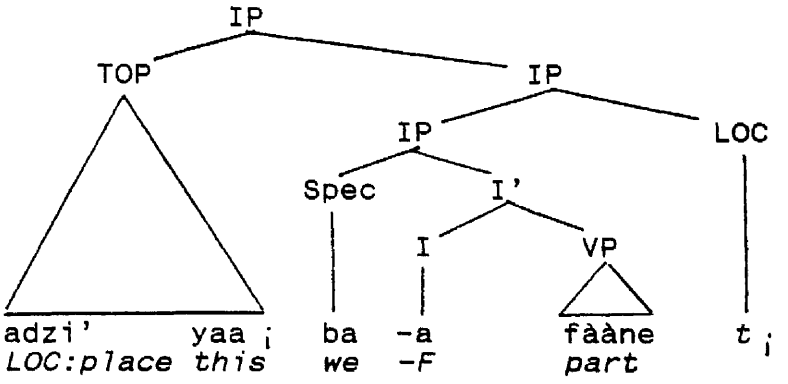
ŋ-gɨ-à àfà' batò *t*$_i$
R-do-IMP work 1+3 (me-with-him)
Every day, I was always working with him.

(25)a. ***[Agbele èkụ lu]$_i$, bɔ̀ le ye èghɨ bɔb *t*$_i$**
PP on bed DEF they P3 see things their
On the bed, they found their things.

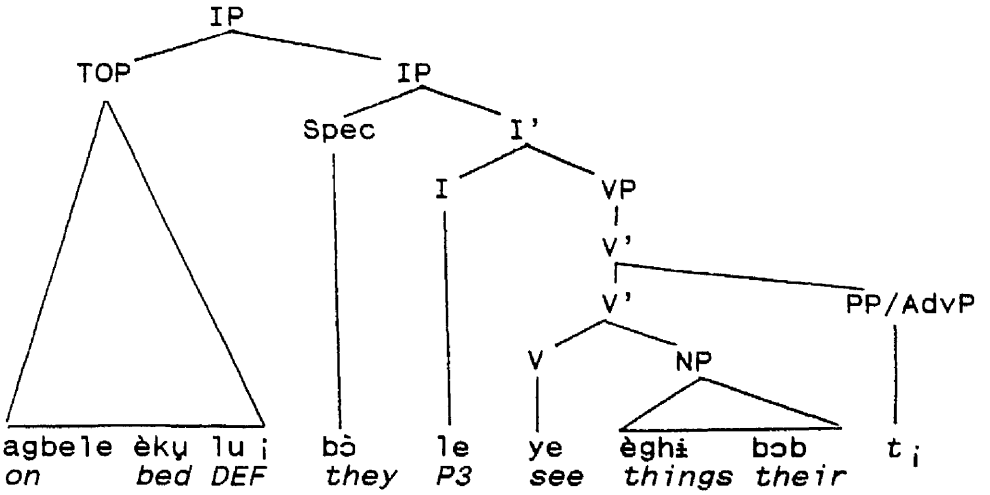
b. ***[Elɨ ŋgaa]$_i$, bɔ -ɔ̀ ŋ-gɨ-à àfà' yɔb *t*$_i$**
MANNER way that they-IMP R-do-IMP work their
In that way, they are doing their work.

Since subjacency requirements do not rule out the movement in (25a/b), which crosses only one bounding node (IP), their ungrammaticality must have to do with the failure of the trace to be properly governed. Compare the structures (26) and (27), corresponding to (24a) and (25a) respectively.

(26)



(27)*



In (26), the phrase headed by the locative marker **a** (which we shall refer to as the locative phrase, whether it has a locative or temporal meaning) is adjoined to IP. This makes sense intuitively for temporal "locatives", at least, since INFL contains TENSE features. The trace is not theta-marked, but *is* antecedent governed from the TOPIC position, thus respecting the Empty Category Principle (ECP). In (27), however, the PP is adjoined to V': that is, it is analysed as a VP adverbial rather than as an IP (sentence) adverbial. The trace left behind by PP movement to TOPIC position is not theta-marked by V, since it is an optional adjunct. Neither is it antecedent governed, since VP is a blocking category in relation to the trace, and a blocking category that is not IP constitutes a barrier for outside government (Chomsky 1986b). So the ECP is violated and the resulting sentence is ill-formed. Note that further research is needed to find additional syntactic evidence for this distinction between VP and IP adverbials; but such evidence is hard to come by in Mundani, where VP cannot be moved, or substituted for, as a unit.

A third constraint on Topicalisation concerns the movement of an internal argument (object) NP to the TOPIC position. Such movement is possible only if the external argument (subject) NP is at the same time in the postverbal FOCUS position. The converse is also true: the subject NP may occupy the postverbal FOCUS position only if the object NP (where there is one) is moved out to the TOPIC position. So (28a/b) are equally unacceptable.

(28)a. ***[Àkatè yu]$_i$ tà ø sɨŋ t$_i$**
NP letter DEF he PF write
The letter he wrote.

b. ***E ø sɨŋ àkatè yu [tò -à]**
ds PF write letter DEF him-FOC

***E ø sɨŋ [tò-à] àkatè yu**

The letter was written by him.

We have already seen that the the TOPIC position is distinct from the subject [Spec,IP] position; so the reason for this constraint on Topicalisation is *not* that [Spec,IP] needs to be empty to serve as a landing site for the moved object NP. Does the internal argument (object) position need to be empty to receive a focussed NP and so rule out (28b)? This possibility will be considered in 4.2.2; but even if it proves to be the case, it would not account for the ungrammaticality of (28a). An alternative approach is to regard the feature [+FOCUS] as the "trigger" for object Topicalisation. [+FOCUS] is assigned only to subjects (or more precisely, to Agents: 4.2.2.2). Where [+FOCUS] is not assigned, there is nothing to trigger object Topicalisation, with the result that sentences such as (28a) are ruled out. Where [+FOCUS] *is* assigned, it triggers obligatory object Topicalisation; if the object should fail to be topicalised the resulting sentence is ill-formed (28b).

However, this account does not really explain *why* the FOCUS feature should be required as a trigger for NP complement (object) Topicalisation and not for the Topicalisation of other syntactic units.

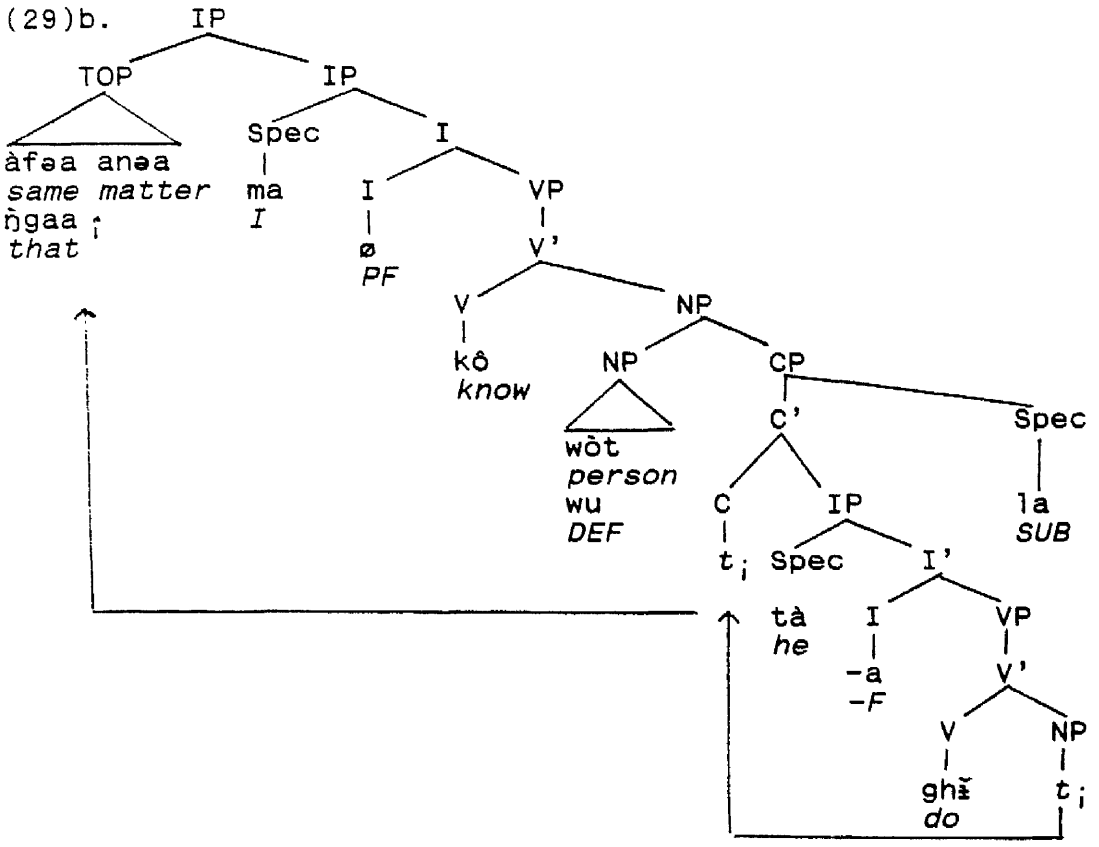
Let us examine another case of apparent object Topicalisation (29). This example appears not to require a [+FOCUS] trigger, and also seems to violate subjacency requirements (or the Complex NP Constraint, in Ross's terms (Ross 1967b)).

(29)a. **[Àfəa anəa ŋgaa]$_i$, ma ø kô [wòt wu**
NP same matter that I PF know NP person DEF

[[tà-a ghɨ̄ t$_i$ la]]]
CP IP he-F do SUB IP CP NP

That same thing, I know the person who will do (it).

(29)b.



If we adopt the movement analysis shown in (29b), there are two successive cyclic movements of the Topic element, to the lower COMP, and then to the TOPIC position adjoined to the upper IP. The first step crosses only one bounding node, IP; but step 2 crosses two bounding nodes, NP and IP, contrary to subjacency requirements. Why, then, is (29) acceptable?

Under a movement analysis, one might expect the movement to be blocked by an item in C, the intermediate landing site for the moved element. This proves not to be the case, however.

(30) **[Afəa anəa ŋgaa]¡, ma ø kô [wòt wu**
NP same matter that I PF know NP person DEF

[[tà ø su]][ndɨ́ [tà-a ghɨ̃ t¡ la]]]
CP IP he PF say CP how IP he-F do SUB
That same thing, I know the person who has said how he will do it.

In (30), the lowest C position is filled by **ndɨ́**, but this has no effect on the grammaticality of the sentence.

An alternative possibility is that (29) and (30) are examples of Left Dislocation (LD): that is, of non-movement structures where **àfəa anəa ŋgaa** is base-generated in the highest IP adjunct position.

Ross regards the presence/absence of a pronoun copy of the moved NP as a basic distinction between Topicalisation and LD: "The rule of Topicalisation (is) a process which is formally almost identical to Left Dislocation, with the exception that while the latter rule leaves behind a pronoun to mark the position in the sentence that the fronted NP used to occupy, the rule of Topicalisation does not." (Ross 1973:253, quoted in Junaidu 1990.) If (29/30) are examples of LD, one would expect a pronoun copy in the lowest IP, but there is none. In Mundani, however, the presence/absence of pronominal copies is determined by other factors, such as the grammatical role of the NP concerned, and/or its degree of animacy (Parker 1990:23). In general terms, an NP high on the animacy hierarchy will tend to receive a pronominal copy, whereas a [-ANIMATE] NP will not. For example, if **àfəa anəa ŋgaa** in (29/30) were replaced by a [+ANIMATE] NP as in (31), a pronoun copy would appear in the lowest NP:

(31) **[Wạ wu]; , ma ø kô [wòt wu**
NP child DEF I PF know NP person DEF

[[tà-a ye atò; la]]]
CP IP he-F see him SUB
The child, I know the person who will see him.

For these reasons, pronoun copies do not help us to distinguish Topicalisation from LD in Mundani, and we turn instead to diagnostics of non-movement constructions such as subjacency violations or the "filled COMP test" used in (29) and (30). To summarize: by applying tests such as subjacency and "filled COMP" to the data, we are forced to acknowledge the existence of LD (non-movement) structures in Mundani; but more research is needed to disentangle specific cases of LD from Topicalisation involving movement.

4.2.2 Focus

We return now to example (19a), repeated here as (32b), alongside its regular SVO counterpart (32a).

(32)a. **Tà ø ŋa akatè yu.**
he PF give letter DEF
He gave the letter.

b. **Àkatè yu è ø ŋa tò -à.**
letter DEF ds PF give him-FOC
The letter was given by him.

In (32b), the object NP **àkatè yu** has been extracted to TOPIC position, and in addition subject inversion has placed the subject in the immediate postverbal FOCUS position. The normal third person singular subject pronoun form **tà** has become the focussed form **tò-à**, *him-FOC* as distinct from the corresponding object form **a-tò**, *OBJ-him*. While the latter is prefixed by the class 1 object marker, the former is suffixed by what we assume to be some kind of Focus marker. Note, however, that although the Focus morpheme is *suffixed* to regular pronoun forms and to focussed NPs with a nominal head (33), it *precedes* a focussed emphatic pronoun form (see (35) below), in much the same way as class 1 object marking. The two morphemes almost certainly have a common origin, especially since the NP object position is the natural FOCUS position when no one item in the sentence is in special focus, and since the majority of class 1 nouns are [+HUMAN] and therefore likely to be Agents and in focus to some degree. Nevertheless, synchronically, class 1 object marking and Focus marking are distinct.

Subject inversion occurs with intransitive verbs as well as transitive ones:

(33) **È ø gha Tanyì-à.**
ds PF go Tanyi-FOC
It was Tanyi who went.

Inversion seems, however, to be constrained by thematic roles: the data suggest that only Agents are susceptible to subject inversion. Thus a verb such as **eghǫ̀ǫ̀ne** *to be ill*, where the subject has the PATIENT rather than the AGENT role, sounds noticeably awkward with the subject in FOCUS position:

(34) **?È ø ghǫ̀ǫ̀ne tò -à.**
ds PF be:ill him-FOC
It is he who is sick.

The sentences (32) through (34) show how a focussed expression encodes information that is in some sense "new" or "unknown" to the addressee. (33), for instance, might be the answer to the question "Who went?" The answer

introduces the new information sought by the enquirer, "Tanyi", in FOCUS position. Note also that the function of FOCUS is contrastive: it was *Tanyi* who went and not some other person.

4.2.2.1 Focus as a kind of Passive?

We have already noted the interdependence of object Topicalisation and subject Focus. This raises the obvious question: are Focus constructions in fact a kind of Passive?

The chief properties of Passive sentences are the following[6] :

(i) The Passive verb does not assign an external theta role to an NP in an A-position. In English, it is claimed that the external (normally AGENT) theta role is "absorbed" by Passive morphology on the verb.

(ii) The Passive verb cannot assign ACCUSATIVE Case to its complement: that is, structural Case, like the AGENT theta role, is absorbed by Passive morphology.

(iii) The NP complement therefore moves to the [Spec,IP] position in order to receive Case and avoid a violation of the Case Filter. It recieves NOMINATIVE Case from a finite INFL. [Spec,IP] is available to the NP complement because it is not assigned to an external argument (property (i)).

The fate of the Agent NP in a Passive construction varies cross-linguistically: in English it is either absent altogether, or appears in adjunct position in a "by" phrase, or, for a very small subset of verbs, is incorporated into the passive verb itself (*The project is government-controlled*). In many languages, however, the Passive does not permit an Agent phrase; in others such as Indonesian, the Agent NP is associated with an adposition that occurs *only* with Agentive phrases; in others such as Quechua, incorporation of the Agent NP into the verb is much more widespread than in English (Keenan 1985:261-265).

If we measure up Mundani Focus sentences against these properties, we immediately encounter problems.

Firstly, there is no overt Passive verbal morphology: verb forms are identical to those used in non-Focus constructions.

Secondly, although the NP complement is raised, it does not move to the [Spec, IP] position, which is occupied by the dummy subject marker è. Instead, it moves to an IP adjunction position where it *cannot* receive Case. This means that its movement is not motivated by the need to acquire Case, and we assume that it has already received structural ACCUSATIVE Case from the verb at D-structure, or at some level of representation between D-structure and S-structure. This assumption is supported by examples such as (35), where the class 1 pronoun in the Topicalized phrase has the form of the ACCUSATIVE and not the NOMINATIVE Case:

(35) [wè /*è,*à nɨ̀]ᵢ è ø ye *t*ᵢ a mmɔ̃.
TOP c1:ACC/c1:NOM big ds PF see FOC me:EMPH
The big one was seen by me.

To summarize, in a Focus sentence, the verb has no Passive morphology; the verb assigns structural ACCUSATIVE Case to its complement; the NP complement has therefore no need to move to acquire Case, and in fact moves into an IP adjunction position where it cannot do so. We conclude that such Focus structures are not Passives. The nature of the FOCUS position in syntactic terms, and the question of the AGENT theta role, are discussed in the next section.

4.2.2.2 Identifying the FOCUS Position

We have already noted the fact that the AGENT NP can occupy the postverbal FOCUS position only if the NP complement is at the same time moved up to TOPIC position. At first glance it looks as if the NP complement is forced to move out to make way for the focussed element: that is, that the FOCUS position *is* the NP complement position. This account would help explain the fact that the direct object is the natural Focus in a sentence where no one element is especially in focus.

There are some indicators, however, that the FOCUS and direct object positions are distinct from each other in Mundani.

Firstly, intransitive verbs that lack an internal argument position may allow a postverbal focussed Agent NP, pointing to the existence of a separate FOCUS position.

Secondly, when regular (non-emphatic) pronouns are focussed, they surface in postverbal position in a Focus form that is different from their object (ACCUSATIVE) form. This fact again suggests that the FOCUS position is distinct from the object position.

Thirdly, whereas a postverbal direct object NP is in the same phonological domain as V, a postverbal focussed NP is not. This fact is illustrated by the operation of sandhi rules in (36a/b). In (36a), the sequence V + direct object allows for the disappearance of the low tone prefix è- in **èkatè** by vowel elision and tone deletion. In (36b), however, the sequence V + focussed NP disallows the operation of vowel elision and tone deletion, showing that V and FOCUS are in separate phonological domains:

(36)a. **Bɔ ø taa èkatè bu.** → **[bɔ́ tǽ: kǽtè bū]**
they PF close schools DEF
They have closed the schools.

b. **E ø gha èngeme wu.** → **[è ɣǽ èŋgémé wū]**
ds PF go python DEF ***[è ɣǽ ŋgémé wū]**
It was the python who went.

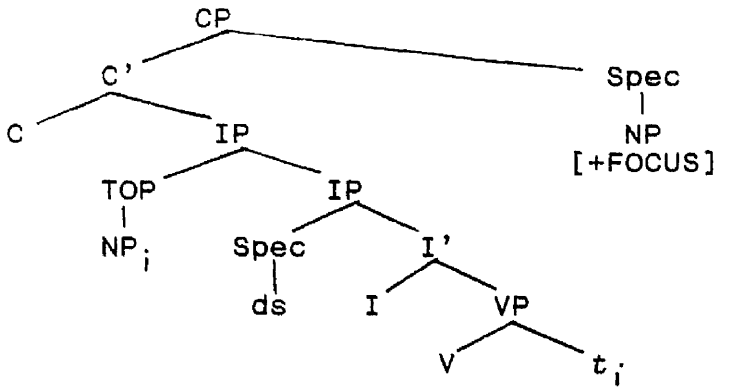
It appears, then, that the FOCUS position is distinct from the NP object position. Also, the operation of sandhi rules in (36) shows that at S-structure the focussed NP is to the right of the (empty) NP object position, since it is outside the phonological domain formed by the sequence V + NP object.

Following ideas proposed by Tuller (1989) for the analysis of Focus constructions in various Chadic languages, there are at least two positions to which [+FOCUS] elements might be assigned in Mundani: [Spec,CP] and a VP adjunction position.

It will be recalled that [Spec,CP] is clause-final. Since in a Focus construction the NP object is moved to clause-initial TOPIC position, and V' adjuncts (PPs, etc.) are obligatorily absent, a focussed element in [Spec,CP] would appear in the immediate postverbal slot in the linear surface string, as required. In this position, it would belong to a different syntactic domain to V with its empty complement position: the latter are in VP (or IP:

see below); the focussed item is in CP. If the syntactic domains differ, then so also do the phonological domains for the operation of sandhi rules as in (36). The proposed structure is outlined in (37):

(37)



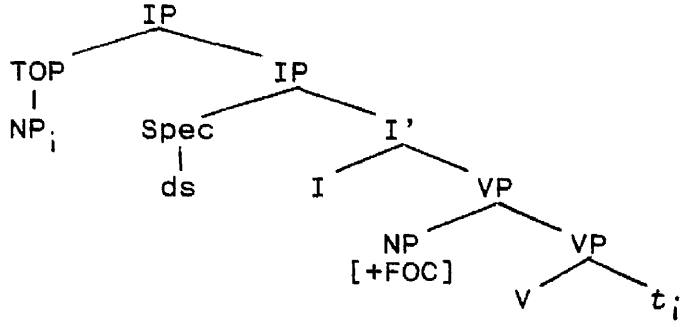
Supporting evidence for the assignment of the focussed element to [Spec,CP] comes from the fact that the question morphemes -â/-le' (Q/EQ), which also belong in [Spec,CP], may not occur in a Focus clause (38a). However, a clause-final falling tone pattern signalling a question *does* occasionally co-occur with a focussed NP (38b): perhaps this question marker's lack of segmental content makes co-occurrence with Focus marking more acceptable.

(38)a. *Ɛ̀ lè ŋa Fɔ̰ -à -le'?
ds P3 give chief-FOC EQ

b. Ɛ̀ lè ŋa Fɔ̰ -â?
ds P3 give chief-FOC:Q
Was it the chief who gave (it)?

An alternative to the [Spec,CP] approach is to posit a VP adjunction position assigned the feature [+FOCUS] by INFL. The proposed structure is seen in (39).

(39)



The hypothesis outlined by Tuller (1989) for Chadic languages such as Kanakuru is based crucially on the

assumption that V moves to I to acquire TENSE features. In Mundani, finite I (which we shall later relabel TENSE: see chapter 7) comprises one or more markers encoding Tense-Aspect (T/A) categories. These items - whether clitics attached to the subject NP, or independent words - are quite separate from the verb, so one would not expect verb movement to be necessary. However, the morphological and tonal form of the verb itself changes according to the T/A specification in I, as illustrated in (40) by **ekɨ'ɨ**, *to come*.

(40)

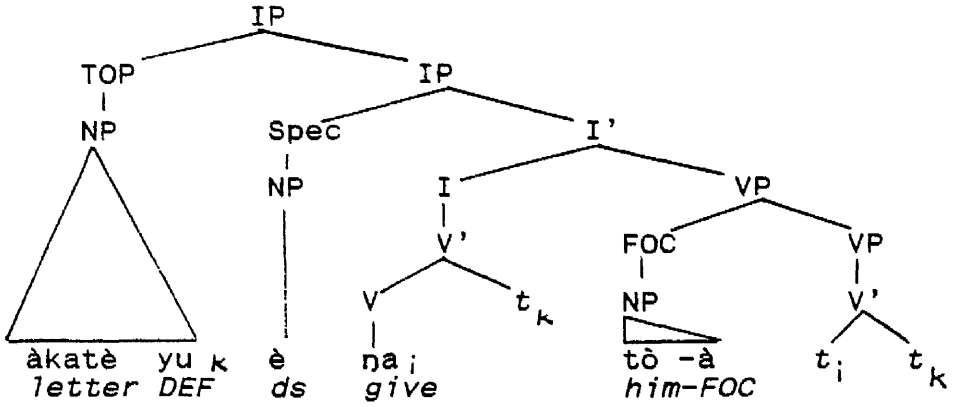
T/A specification in I	Verb form
Perfective	**kɨ́'ɨ̀**
Imperfective	**ŋ̀-kɨ̀'ɨ̂**
Past Tense: P1	**ŋ̀-kɨ̀'ɨ̂**
P/P2	**kɨ̀'ɨ̂**
P3	**kɨ́'ɨ̀**
Future Tenses	**(ē-)kɨ́'ɨ́**

We assume that the verb does move to I, then, to acquire the necessary T/A features.

Suppose further that Case is assigned to the object NP not at D-structure, but at some level of representation between D- and S-structures, by V and not by the trace of V, and only under strict adjacency. This means that the object NP has to move up to I along with V in order to receive ACCUSATIVE Case.

The presence of a lexical verb in I allows the feature [+FOCUS] to be assigned by I, under government, to the VP adjunction (FOCUS) position. This assignment in turn triggers the raising of the object NP (already Case-marked) to the TOPIC position. The scenario is diagrammed in (41), which is a representation of example (32b).

(41)



One question remains in relation to both analyses: how can the verb discharge its external (AGENT) theta role? If the focussed NP is base-generated in the regular subject position [Spec,IP], it will receive its external theta role in the normal way, before being moved by a rule of subject postposing to either [Spec,CP] or a VP adjunction position, according to the preferred analysis. Alternatively, it might be argued that in a sentence where the feature [+FOCUS] is assigned, the verb is blocked from assigning its external theta role. The subject position, which must receive a phonetic realization in Mundani, is therefore occupied by the non-theta-marked expletive **è**. The focussed NP is base-generated in the FOCUS position, which, whether [Spec,CP] or an IP adjunct, is a theta-bar position, but where the FOCUS feature nevertheless permits the AGENT theta role to be discharged. Notice that this explanation runs counter to Burzio's (1986) generalization, that a verb which lacks an external argument also fails to assign ACCUSATIVE Case.

4.2.3 Cleft and Pseudo-Cleft Sentences

Cleft and Pseudo-Cleft constructions offer alternative strategies for Focus and Topicalisation respectively. For each construction type we give a linear schema plus an example, without further discussion at this stage.

(i) Cleft Construction (Focus)

(42) Dummy Subject + Copula "be" + FOCUS NP + REL CLAUSE

È ka wu tò -à [(ka) tà ø buŋe visǫ la]
ds NEG be him-FOC REL (SPEC) he PF kill female: SUB elephant
It was not he who killed the female elephant.

(ii)Pseudo-Cleft Construction (Topicalisation)

(43) Subject NP + REL CLAUSE + Copula "be" + Complement NP

We	**m̃bɪ̀**	**wu**	**[**	**è**	**ø**	**tù'ù**	**èvə**		**Fə̀**	**la]**
c1	first	c1	REL	ds	PF	reveal	death	(of)	chief	SUB
ACC		DEF								

wû Ndzěm
be Darkness
The first one who reveals the Chief's death
is Darkness (=a member of the Darkness Society).

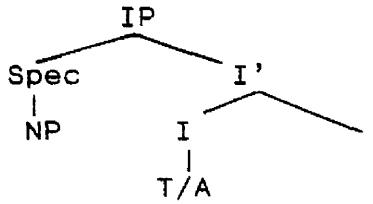
CHAPTER 5 - THE CATEGORY INFL: AN OVERVIEW

This chapter presents a very brief overview of some of the problems to be dealt with in the analysis of the INFL constituent in Mundani. It is intended to serve merely as an introduction to the detailed treatment of INFL in chapters 6-9.

5.1 Finite INFL

In the study of clause structure in chapters 3 and 4, we have identified the category INFL (I) which projects to IP. The structure of IP is schematized in (1):

(1)



The Spec position is occupied by the subject NP; the phrasal head I is occupied by a Tense-Aspect (T/A) marker which may or may not have overt phonetic content, and which may be simple or complex. Examples of the possible content of I are seen in (2), where the I' bracketing has been omitted for simplicity.

(2)a. [[**Bâ** [**ø** [**kô** **wòt** **wu**]]]]
IP NP we I PF VP know person DEF
We know the person.

b. [[**Bɔ** [**-le** [**kɨ'ɨ**]]]]
IP NP they I -P3 VP come
They came.

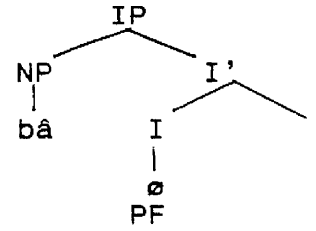
c. [[**Tà** [**-à** [**m̃-bìì̂t-a** **awɔb**]]]]
IP NP he I -IMP VP R-ask -IMP them
He is asking them.

d. [[**Tà** [**-à** **kà'à** **lô'** [**ŋ̃-gà**]]]]
IP NP he I -P2 NEG:P2 AUX:P1 VP R-go
(Yesterday) he did not go (after something else had occurred).

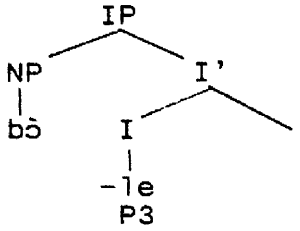
In (2a), I is a zero element, without phonetic content; in (2b) and (2c), I contains a clitic designating Tense or Aspect respectively; in (2d), we see a case of "complex INFL" comprising a Tense clitic **-à**, a marker of negation **kà'à**, and a Tense auxiliary **lô'**, used in this context to signal relative time (the action of the main verb **ŋ̃gà**, *go* occurred *after* something else had already taken place).

For each sentence in (2), we can assign a provisional structure to IP as follows:

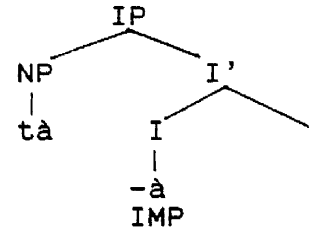
(2)a.



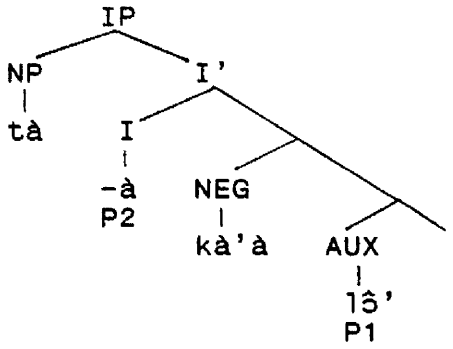
b.



c.



d.



Clearly these structures beg several questions. For example, is NEG **kà'à** rightly considered an element within complex INFL, or is it a separate phrasal category NegP? Is the Tense Auxiliary **lɔ̂'** to be analysed as a part of complex INFL, or as a separate VP/AuxP?

Furthermore, the structures take no account of the modal (realis) marking on the main verb in (2c/d), nor of the postverbal imperfective marking in (2c). Are these elements correctly assigned to VP (or, more specifically, to V), or should they also be analysed as part of a complex (possibly discontinuous) INFL constituent? These questions are taken up briefly in the next section.

5.2 Non-finite INFL

Note first that the examples in (2) are all *finite* clauses with overt Tense marking, or marked for Perfective/Imperfective Aspect that is interpreted as Present Tense. In other words, INFL in these sentences has the feature [+TENSE]. There is no overt evidence of agreement marking, so we shall assume the feature [-AGR].

(3) presents examples of *non-finite* clauses (enclosed in square brackets):

(3)a. **Tà lè kɨ'ɨ [e- biite awɔb].**
he P3 come IR-ask them
He came to ask them.

b. **Tà lè kɨ'ɨ [m̀-bìite awɔb].**
he P3 come R-ask them
He came and asked them.
(Lit: He came asked them.)

These non-finite clauses are defined by the following characteristics: (i) the presence of a realis or irrealis (R/IR) modal prefix on the verb; (ii) the absence of an overt subject; (iii) the lack of any preverbal tense/aspect (T/A) markers.

If the R/IR modal prefix is removed from a non-finite clause of this type, the result is ill-formed:

(4)a. ***Tà lè kɨ'ɨ [ø -biite awɔb].**
he P3 come IR-ask them
He came to ask them.

b. ***Tà lè kɨ'ɨ [ø-bìite awɔb].**
he P3 come R-ask them
He came and asked them.

It is equally unacceptable to introduce an overt subject into the non-finite clause:

(5)a. ***Tà lè kɨ'ɨ [tà e -biite awɔb].**
he P3 come he IR-ask them
He came to ask them.
(Lit: He came he would ask them.)

b. ***Tà lè kɨ'ɨ [tà m̀-bìite awɔb].**
he P3 come he R-ask them
He came and he asked them.

Also, we cannot introduce preverbal T/A marking into the non-finite clause:

(6)a. ****Tà lè kɨ'ɨ [á e -biite awɔb].**
he P3 come F IR-ask them
He came to ask them.

b. **Tà lè kɨ'ɨ [lè m̀-bìite awɔb].
he P3 come P3 R-ask them
He came and asked them.

On the other hand, if we carry out all three changes mentioned above - the suppression of the R/IR prefix along with the introduction of an explicit subject and T/A marking - the result is perfectly grammatical but is no longer a non-finite clause. Instead, it comprises a *finite* clause with a different reading from its non-finite counterpart:

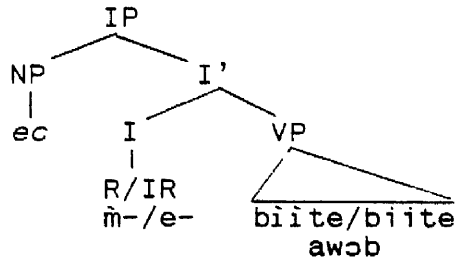
(7)a. **Tà$_i$ lè kɨ'ɨ, [ta$_k$-a biite awɔb].**
he P3 come he$_k$-F ask them
He came, he (someone else) will ask them.

b. **Tà$_i$ lè kɨ'ɨ, [tà$_k$ lè bìite awɔb].**
he P3 come he$_k$ P3 ask them
He came, he (someone else) asked them.

In summary, the three features mentioned above - the presence of R/IR marking and the absence of an overt subject and of preverbal T/A marking - are interdependent, and *together* form the defining characteristic of this type of non-finite clause.

Consider now the R/IR prefix. Since this element signals a modal distinction and is also associated with a particular type of non-finite clause, it would seem plausible to assign it to non-finite INFL, in much the same way that *to* is assigned to non-finite INFL in English. The structure of the embedded clause in (3a/b) might then be diagrammed as follows:

(8)



5.3 Approaches to the syntactic analysis of INFL

Under the approach outlined in 5.1 and 5.2, finite and non-finite INFL are in complementary distribution: finite INFL occurs in a matrix or embedded clause where the subject position is filled with overt material; non-finite INFL occurs only in an embedded clause with no overt subject. Furthermore, the possible content of the two types of INFL is discrete: finite INFL may be simple or complex, and is composed of items taken from a closed class of T/A markers (see chapter 6), whereas non-finite

INFL is simple, composed normally of either a realis or an irrealis marker only[1] (see chapter 8). Finally, the two types of INFL differ in their feature specification: we shall argue that finite INFL has the features [+TENSE] [-AGR], while non-finite INFL has the feature [-TENSE], and also the feature [+AGR] deriving from its anaphoric "same-subject" functions (see chapter 9).

In the light of the distinct identities of finite and non-finite INFL, there is a strong case for regarding the two as separate syntactic categories, namely TENSE and AGR, with the maximal projections TP and AgrP respectively. However, R/IR marking does not occur only in the kind of construction seen in (3a/b). It appears also in serial verb constructions and in sequences of auxiliary verbs (see the examples in section 8.2), and (unexpectedly) in all imperfective verb forms (see (2c) above). If such configurations are regarded as monoclausal, it may be necessary to analyse INFL as a "split constituent" in which the TENSE component remains in the normal pre-VP position, while the AGR component is attached to a verb (or to more than one verb) "lower down" the structure. The merits of the different approaches will be examined in chapter 9, along with the possibility of achieving a coherent account of R/IR marking in the various contexts in which it occurs.

CHAPTER 6 - THE CATEGORY TENSE: CONTENT

6.0 Introduction

In chapters 6 and 7 we shall examine the TENSE (finite) component of INFL in terms of its content (chapter 6) and the syntactic status and properties of the different kinds of tense-aspect-modal (TAM) marker that appear in it (chapter 7).

In this chapter, section 6.1 presents an overview of the range of tense-aspect marking in the language; 6.2 covers four modal categories whose marking falls under finite INFL; in 6.3, we briefly recap negative marking - already covered in some detail in chapter 3; 6.4 summarizes the different TAM and NEG markers that may occur in finite INFL. Section 6.5 attempts to disentangle complex finite INFL constituents composed of several items. The linear ordering and co-occurrences of these items are described. More interestingly, their varying stages of development along a continuum from lexical verbs to function words, and the variety of semantic shifts that they display in particular combinations, are evidence of an "unstable" system of TAM-NEG marking that is undergoing considerable change.

6.1 An overview of tense-aspect marking

This section presents an introductory overview of the tense-aspect system in the language.

6.1.1 The Tenses

Like other Grassfields Bantu languages, Mundani grammaticalizes fine distinctions along the time-line. There are four past and four future tenses, and forms unmarked for tense that are normally interpreted as present. The past and future markings are seen in (I) and (II) respectively, in their perfective forms. The "present" tense forms are presented in (III), and traces of a narrative tense in (IV). The verb used throughout is **etsu**, *to come down*. The tense marking is underlined; the symbol = signals clitic attachment, further discussed in 7.1.1. In some cases there is more than one form available for a given tense: factors that may determine the choice of a particular form will be discussed in section 6.5.

(I) Past Tenses (P-P3)

(1) P1 Past Today
Tà ghɨ̂ ǹ-tsū
Tà lɔ̂' ǹ-tsū
Tà lí ǹ-tsū
He came down (earlier today).

(2) P2 Past Yesterday
Tà =à tsú
He came down (yesterday).

(3) P3 Past Before Yesterday
Tà =lè tsú
He came down (before yesterday).

There appear to be only three past tenses, compared with four future tenses. This asymmetry is only apparent, however, since the function of the P2 (Past Yesterday) form has been generalized to designate the notion of General Past ie. it has a parallel function to the General Future Tense (F) seen in (5):

(4) P General Past
Tà =à tsú
He came down (at some unspecified time).

(II) Future Tenses (F-F3)

(5) F General Future
Tá =ā tsú
He will come down (at some unspecified time).

(6) F1 Future Today
Tá =ā ghɨ̄ ē-tsú
Tá =ā lɔ̄'ɔ́ ē-tsú
He will come down (later today).

(7) F2 Future Tomorrow
Tá =ā sà'á ē-tsú
He will come down (tomorrow).

(8) F3 Future After Tomorrow
Tà =ā lí ē-tsú
He will come down (some time after tomorrow).

Notice that the General Future clitic marker =ā appears in *all* future tense forms, followed by a marker specifying Future Today, Tomorrow or After Tomorrow. The clitic marker =ā carries a high tone in the underlying structure. This inherent high tone emerges when the marker appears in postverbal position (3.3.2.2); but in preverbal position it is lowered to mid by the operation of Meeussen's Rule of high tone lowering (see 7.1.1.3). It will be written as -a throughout the rest of this study.

Both past and future tenses may be used in two distinct ways:

(i) To establish absolute time reference: that is, to place an action or event in the past or future relative to the moment of speech or discourse time.
(ii) To establish relative time reference, placing a given action or event in the past or future relative to a point in time that is different from the discourse time, and which may or may not be stated explicitly.

(9) is an example of a complex sentence which has two possible readings according to the interpretation of Tense F2 (marked by **sà'á**) in the second clause. In reading (i), Tense F2 is given the absolute sense of Future Tomorrow in relation to the discourse time; in reading (ii), Tense F2 is interpreted in a relative sense, as Future Tomorrow in relation to the time-frame (P2 - Past Yesterday) of the preceding clause.

(9) **Tà-à sû tesi nê, ye -a sà'a e -ghã awen**
he-P2 say yesterday that he:LOG-F F2 IR-go LOC: market

(i) He said yesterday that he would go to market (tomorrow).
(ii) He said yesterday that he would go to market (the following day ie. today).

Unlike other tense morphemes, the P1 tense markers **ghɨ̂/lɔ̂'** and the corresponding F1 markers **ghɨ̄/lɔ̀'ɔ** may combine absolute and relative temporal interpretations in a single clause. That is, they signal "Past Today" or "Future Today" in terms of discourse time, and may simultaneously express a relationship between the action of the main verb and a second action/event occurring within the same day, which may or may not be stated explicitly, but which is different from discourse time. The specific functions of these four markers in the system of relative time reference are summarized in (10):

(10)

Tense	Marker	Function in relative time system
P1 F1	ghɨ̂ ghɨ̄	Relates the action of the main verb to another action occurring *later* the same day.
P1 F1	lɔ̂' lɔ̀'ɔ	Relates the action of the main verb to another action occurring *earlier* the same day.

These functions are illustrated in (11) and (12):

(11)a **Tà ghɨ̂ ǹ-tsu**
he P1 R-come:down
He had come down earlier today, before something else happened (Past Anterior)

b. **Ta-a ghɨ̃ e- tsu**
he-F F1 IR-some:down
He will have come down, later today, before something else happens.

(12)a. **Tà lɔ̂' ǹ-tsu**
he P1 R-come:down
He then came down, earlier today, after something else had happened

b. **Ta-a lɔ̀'ɔ e- tsu**
he-F F1 IR-come:down
He will then come down, later today, after something else has happened.

The P1 indicator **lí**, instead of combining absolute and relative time reference like **ghɨ̂** and **lɔ̂'**, further refines the "earlier today" absolute time frame by referring to the early morning period: **Tà lí ǹ-tsu**, *He came down early this morning.*

A full discussion of relative time reference in Mundani is found in Parker 1985c.

(III) "Present" Tense (Zero-Tense-Marked Forms) are seen in (13) and (14):

(13) Perfective **Tà ø tsǔ**
he PF come:down
He has come down.

The "present" perfective receives zero preverbal marking. The corresponding imperfective form is as follows:

(14) Imperfective **Tà=à ǹ-tsù -á**
he=IMP R-come:down-IMP
(i) He is coming down (now)
(ii) He comes down (habitually).

The preverbal imperfective marker is encliticized onto the subject pronoun **tà** and occupies the same slot in the linear structure as the clitic tense markers in past and future tenses. The imperfective marker suffixed to the verb is probably best regarded as an agreement marker ie. as a form that has been incorporated into the verb (see the discussion in 7.4).

(IV) Narrative Tense (N)

In addition to the past, future and "present" (zero-marked) forms, Mundani has some traces of a narrative tense. The beginning of each major episode in a past tense narrative is marked by **lí**, as follows:

(15) **Banyą̀ bu bàgàme lí ǹ-tsū...**
animals DEF all N R-come:down
All the animals came down...

Although this form is homophonous with one form of Tense P1 (Past Today), **lí** in (15) serves to place the events of the narrative in the *remote* past in relation to discourse time. Apart from this overt marking at the start of a new episode, narrative tense forms are mostly identical with the non-tense-marked perfective forms illustrated in (13):

(16) Perfective/ **Tà ø tsú**
Narrative *He has come down/He came down.*

There are, however, exceptions in a particular subset of verbs[1] where the narrative form can be clearly distinguished from its perfective counterpart by the tonal pattern on the verb stem:

(17) Perfective **Tà ø kɨ̀'ɨ̀** H-L
He has come.

Narrative **Tà ø kɨ̀'ɨ̂** L-H̀L
He came.

In such narrative forms, a low tone appears on the normally high tone root of the verb. This low tone is assigned to the TENSE component of INFL in the syntax, as a marker of narrative tense. At S-structure (or PF), it docks onto the initial syllable of the verb, displacing the high root tone to the right to form a H̀L glide on the final syllable, as shown below:

(18) **[[tà [ˋ [kɨ́'ɨ́]]]]** → **tà kɨ̀'ɨ̂**
IP NP I VP H-L L-H̀L

Further research is needed to discover why the low tone is visible in only one subset of verbs. One possible explanation is that the narrative tense was more fully developed at an earlier stage of the language, but that narrative forms are undergoing a process of neutralization with non-tense-marked perfective forms; alternatively, one could imagine the contrary historical process in which the

narrative tense is a recent, incomplete development. In this particular instance, the directionality of change is unclear.

6.1.2 The Aspects

6.1.2.1 Perfective and Imperfective

The basic aspectual distinction is between perfectivity and imperfectivity. This distinction is apparent across the range of tenses; however, perfective and imperfective forms that are unmarked for tense will normally have a present tense reading (see (13) and (14) above).

In addition to the non-tense-marked form (19a), imperfective forms distinguish between past and future, as illustrated in (19b/c).

(19) Imperfective Aspect (IMP)

a. "Present" **Tà =à ŋ-kɨ' -â**
he =IMP R-come-IMP
(i) He is coming (now).
(ii) He comes (habitually).

b. Past **Tà =lè wūá ŋ-kɨ' -â**
he =P3 IMP R-come-IMP
(i) He was coming (when X occurred).
(ii) He used to come (habitually).

c. Future **Tà ná =á wūá kɨ'ɨ**
he PROG=IMP?/F? IMP come
(i) He will be coming (when X occurs).
*(ii) *He will be coming (habitually).*

Imperfective forms will be investigated in more detail in 7.1.1 and 7.4. For the moment, note that in the present and past tenses (19a/b) the imperfective has two readings: (i) as an ongoing situation or event that may also serve as the framework for another event (the continuous/progressive reading: see Comrie 1976:25); (ii) as a regularly occurring event (the habitual reading).[2] In future tenses (19c), imperfective **wūá** combines obligatorily with progressive **ná** carrying the high tone characteristic of Future Tense marking. Since the use of this progressive marker is confined in Mundani to situations of an ongoing but *temporary* nature (see 6.1.2.2 below), the habitual reading is ruled out in future tense examples such as (19c).

Perfectivity receives null marking in TENSE. The different past and future tense forms receive a perfective reading when not marked overtly for imperfective aspect. The "present tense" (ie. non-tense-marked) perfective form (20a) is characterized by the distinctive shape of the verb (see Appendix II), and by a marker of negation **bakà** found nowhere else in the system (20b).

(20) Perfective Aspect (PF)

a. **Tà ø kɨ́'ɨ̀**
he PF come:PF
He has come.

b. **Tà ø bákà kɨ'ɨ̂**
he PF NEG:PF come:PF
He has not come.

The basic meaning distinction between perfective and imperfective forms in Mundani corresponds precisely to Comrie's definitions (Comrie 1976: chapter 1):

Perfective aspect views a given situation as a whole unit, without distinguishing its various parts.

Imperfective aspect views a situation in terms of its internal structure.

This distinction is seen clearly in sentences such as (21):

(21) **Tà -lè wua ǹ-dà' -à**
he -P3 IMP R-speak-IMP

afɨ̀' -a wa wu ø nyi la
LOC:time-AM child DEF PF enter SUB
He was speaking when the child entered.

Here, imperfective aspect in clause 1 focuses attention on the internal structure of the act of speaking, as a background to individual events that may occur within it. The perfective aspect in clause 2 views the "entering" as a single indivisible act that cuts into the "speaking" at a particular point.

Imperfectivity is not confined to situations of relatively long duration. It may express a situation that is brief but which has an internal structure of some kind. For instance, **Tà lè wua nyìa**, *He was entering*, refers to an action that is objectively brief; but the imperfective

form draws attention to an internal structuring that provides a possible background for other events eg. *As he was entering the compound he called for his wife to come.*

Imperfectivity may also express a situation - short or long in itself - that recurs over a period of time eg. **Tàà ŋkɔ̀a**, *He is coughing* (a series of short actions). Sometimes the situation is repeated until it becomes habitual or a general state of affairs. These cases can also be expressed by imperfective forms: thus **Tàà ŋkɔ̀a** can mean not only *He is coughing*, but also *He coughs (habitually)*; **Tà lè wua ŋkɨ'â** can mean *He was coming* or *He used to come (habitually)*. Habituality is thus one possible interpretation of imperfective forms, at least in present and past tenses (but not normally in the future - see the discussion of (19c)).

As imperfectivity is not restricted to situations of long duration, so perfectivity is not confined to situations of short duration. In the sentence **Tà lè tsekè abot anè èŋu yetat**, *He stayed there for three months*, the past perfective form focuses on the complete stay, regardless of its length or internal structure.

Equally, perfectivity is not restricted to completed actions. Comrie (1976:18) remarks that "complete" is a more adequate characterization of the perfective than "completed". This is borne out in Mundani by the use of perfective forms of certain stative verbs to encode situations that are not "completed" in time, but which are seen as "complete" in themselves. Examples are seen in (22), where the symbol ø represents the phonetically null perfective marking in TENSE.

(22)	**Tà ø wú fǫ̀**	*He is the chief.*
	Tà ø kô	*He knows.*
	Tà ø zə	*He hears/understands.*
	Tà ø gha awen	*He is on his way to market*
	Tà ø bu èghɨdzɨ	*He lacks food.*

One further function of perfectivity should be noted. The non-tense-marked "present" perfective functions also as a perfect tense: that is, it may express a situation in the recent past that has implications for the present. For example, the perfective form in the sentence **Tà ø dzɨ èghɨdzɨ**, *He has eaten food*, indicates that he ate recently and that he is still full of food.

6.1.2.2 Progressive

Mundani has a marker of progressivity **nà**, with an inherent low tone. **Nà** is obligatorily suffixed by the imperfective **-a**: in other words, progressivity is marked only in imperfective sentences. Examples are seen in (23), where sentences (a) and (b) are grammatical, whereas sentence (c) combining progressive **nà** with the perfective aspect is ill-formed.

(23)a. **Bɔ -ɔ̀ m̃-bèl -a teko èfə' è**
they-IMP R-weed-IMP some(farms) grass it

nà -a ka tsə nyaŋ la
PROG-IMP NEG grow much SUB
They are weeding some (farms) where the grass is not growing much.

b. **Mâ ø zə ñdɨ̀ èbem e -tò nà -a**
I PF hear how stomach AM-his PROG-IMP

ñ-dzù' -a la
R-make:noise-IMP SUB
I heard how his stomach was making a noise.

c. ***Mâ ø zə ñdɨ̀ èbem e- tò**
I PF hear how stomach AM-his

e na ø dzû' la
it PROG PF make:noise:PF SUB
I heard how his stomach made a noise.

As noted above (6.1.2.1), progressive **nà** in Mundani signals the ongoing but temporary nature of a situation: the grass is not growing much at the moment (23a) but may do so at a later date; the stomach was making a noise at that moment (23b) but did not necessarily continue to do so. Another way of describing the unique contribution made by **nà** is in terms of the distinction between states and non-states, or non-dynamic vs. dynamic situations. If a given situation is viewed as a state, it may be marked for imperfective aspect, but not for progressivity; if it is viewed as non-state (dynamic), the progressive marker may be present. These contrasting viewpoints are seen in (24a) and (24b) respectively.

(24)a. State

Tà -à ñ-tsèk-â adzì' yaa
he -IMP R-stay-IMP LOC:place this
He stays here/He is staying here.

b. Non-state

E ø là'a m̀mɔ̃ Francis wu bèzi ǹdɨk bu
ds PF speak me:FOC Francis DEF women white DEF

nà -a ǹ-tsèk-â apfə̀ am la
PROG-IMP R-stay-IMP LOC:compound my SUB
This was spoken by me, Francis, in whose compound the white women are staying.

One would normally consider that the verb **etseke**, *to stay, to remain*, refers to a fairly stable state. The progressive marker in (24b) explicitly draws attention to the dynamic nature of the "staying": the white women are staying in Francis' compound as a temporary measure and are coming and going a good deal. A further example is given in (25), from the story of the elephants' tug of war.

(25) **Bɔ -ɔ̀ ŋ̀-kɨ̀ -â e- ye èsǫ nà -a**
they-IMP R-want-IMP IR-see elephant PROG-IMP

ŋ̀-kpèèl -â anè èsǫ yebe la
R-be:strong-IMP amongst elephants two SUB
They want to see the elephant that is the stronger of the two elephants.

In (25), **ekpeele**, *to be strong*, normally refers to a state. In the context of the narrative, however, it refers to the dynamic process of *proving* strength through the tug of war: hence the progressive form.

The "temporary", dynamic sense contributed by progressive **nà** would seem to be one factor that rules out an habitual reading for sentence (19c), as already observed. However, the general rule that **nà** excludes the notion of habituality has one notable exception. (26) illustrates a common construction that is marked for progressivity, but which expresses an habitual event - or at least, one that is a regular ocurrence.

(26)a. **Bòt ko na -à ŋ̀-gɨ̀-ø[3] è nu**
people some PROG-IMP R-do-IMP they drink

tê m̀-be
until R-be:drunk
Some people drink until they become drunk (regularly).

b. **Etsə' na -à ŋ̀-gɨ̀-ø[3] è tsi**
night PROG-IMP R-do-IMP it be:no:longer
When(ever) day breaks...

Another observation must be made concerning **nà**: in the future it appears to be undergoing a semantic shift from a marker of progressive aspect to a marker of future tense. This shift is evident in the speech of younger informants who may give two alternative forms of the same future tense sentence (27a/b), without being able to make any semantic distinction between the two:

(27)a. **Ta -a li kɨ'ɨ ane àli yu**
he -F F3 come on day DEF
He will come on that day.

b. **Tà na -a kɨ'ɨ ane àli yu**
he PROG-IMP?/F? come on day DEF
(i) He will come on that day.
*(ii) *?He will be coming on that day.*

In (27b), the imperfective reading (ii) is generally judged unacceptable, the normal future imperfective marker **wûá** is absent, and **na** seems simply to replace regular future tense marking rather than to imply any notion of progressivity.

A final note concerns the origin of **nà**. It is clearly related to progressive **nè** in Ngyembɔɔn-Bamileke, a neighbouring language of the Mbam-Nkam subgroup (Anderson p.c.). Lord (1993) describes an "incompletive" aspect marker that is widespread in Benue-Kwa, and which assumes various forms synchronically: **nò, nà, ná, ń, le.** Welmers (1973:312) has related this aspect marker to a locative verb reconstructed in Proto-Niger-Congo as ***na**, *be at.* Mundani **nà** also functions as a kind of (defective) locative verb in sentences such as (28):

(28) **Wàà nà -a lob -â?**
who? be:at-LOC?/IMP? house-Q
Is anyone at home?
(Lit: Who is in the house?)

Such examples seem to indicate a common historical source for Mundani **nà** and the Benue-Kwa incompletive marker. Synchronically, however, although Mundani **nà** applies to situations which could be described as "incompletive", we prefer to designate it as a marker of progressivity, and to reserve the label "incompletive" for the verbal prefix **mé-**. The reasons for this will become apparent in the next section.

6.1.2.3 Incompletive

Mundani has a separate marker for incompletive aspect, namely a high-tone morpheme **mé-** prefixed to the verb. Examples are seen in (29).

(29)a. **À -a mé- ghă awen à ø kô nê**
you:SG-F INC go LOC:market you:SG PF know that

a -a fɨ̀ɨ̀ne èghɨ̀ bê èǧàme
you:SG-F sell things your all
If you are going to market (several times/over a period of time), you will sell all your things.

b. **Bɨ̀ ø mé- tseke wu nɔ̀ bɨ̀tòba**
you:PL OBL INC-remain only together 2p + 3s
You should continue to remain united with him.

c. **Bɔ -ɔ ghà akatè mé- kua ŋ̄-kɨ̀'ɨ̂**
they-PF go LOC:school INC-return R-come

alṵ̀ ǹ-dze èlə' ǹdṵ̀
LOC:path R-see hole (of) giant:rat
They went to school and as they were returning along the path they saw the hole of a giant rat.

d. **Bɔ -ɔ ghă akatè mé- kua**
they-F go LOC:school INC-return

afɨ̀'a nyèmbà'a
LOC:time afternoon
(i) They will go to school and will be returning in the afternoon (when X will occur).
(ii) They will go to school and will be returning in the afternoon (habitually).

Mé- indicates that the situation expressed by the affixed verb is ongoing, "in progress" and dynamic. In this respect it is similar to **nà**. It diverges from **nà**, however, in several ways.

Firstly, its function is to highlight the incomplete, partially realized nature of a situation, rather than its temporary character. In sentences (29a/b), for example, the "going to market" and the "remaining united" are not seen as temporary situations, but rather as incomplete or partially realized ones.

Secondly, **mé-**, unlike **nà**, does not co-occur with imperfective marking. Rather, **mé-** sometimes assumes functions normally associated with imperfective marking and could be said to replace it. (29c) presents an

instance of this "imperfective" use of **mé-**: the situation expressed by the verb **me-kua**, *were returning*, has an internal structure providing a background for individual events such as **ǹ-dze**, *saw*, that may cut into it at a particular point. In fact, (29c) could be recast using regular imperfective forms, to yield the same sort of meaning (30):

(30) **Bɔ ø ghà akatè ŋ̀-kua -ø⁴ ŋ̀-kɨ̀' -â**
they PF go LOC:school R-return-IMP R-come-IMP

alʊ̰ ǹ-dze èlə' ǹdʊ̀
LOC:path R-see hole (of) giant:rat
They went to school and as they were returning along the path they saw the hole of a giant rat.

Why, then, is **mé-** used instead of normal imperfective marking in (29c)? It is selected to focus on the incomplete, partially realized status of the situation concerned; so (29c) might be more accurately translated as *They went to school and as they were <u>still</u> returning along the path...*

A third divergence between **mé-** and **nà** lies in the availability of habitual readings. As already seen, **nà** normally prohibits an habitual reading because of its "temporary" focus; **mé-**, on the other hand, allows an habitual reading in certain contexts, for example in (29d).

A fourth difference between **mé-** and **nà** concerns the kind of construction in which each is commonly found. Whereas **nà** occurs widely across the different tenses, and in both matrix and embedded clauses, **mé-** tends to appear in a more restricted range of clause types where an "incomplete/partially realized" interpretation is likely to occur: in conditional clauses and with future tenses (29a) and in obligationals (29b). It also occurs frequently in non-finite consecutivized clauses (29c/d), where it appears to form part of a three-way modal contrast between realis (realized), irrealis (unrealized) and incompletive (partially realized) forms. The full pattern of this modal marking is illustrated in (31):

(31)a. Realis (R)

Bɔ ø ghà akatè ǹ-kua afɨ̀'-a nyèmbà'a
they PF go LOC: school R-return LOC:-AM time afternoon
They went to school and returned in the afternoon.

b. Irrealis (IR)

Bɔ -ɔ ghà̃ akatè ɛ̄- kua afɨ̀' -a nyèmbà'a
they-F go LOC: school IR-return LOC: -AM time afternoon
They will go to school and return in the afternoon.

c. Incompletive (INC)

Bɔ ø ghà akatè mé- kua afɨ̀' -a nyèmbà'a
they PF go LOC: school INC-return LOC: -AM time afternoon
They went to school and were (still) returning in the afternoon.

Bɔ -ɔ ghà̃ akatè mé- kua afɨ̀' -a nyèmbà'a
they-F go LOC: school INC-return LOC: -AM time afternoon
They will go to school and will be (still) returning in the afternoon.

The role of **mé-** in consecutivized clauses is discussed more fully in 8.3.2. There it is argued that since **mé-** appears also in non-consecutivized finite clauses from which R/IR marking is excluded, and since **mé-**, unlike R/IR marking, makes an independent semantic contribution to the verb to which it attaches itself, it is preferable to regard it *not* as part of the system of modal marking, but rather as one of the set of aspectual morphemes (including perfective **ø**, imperfective **-a** and progressive **nà**) occurring under finite INFL. Nevertheless, the fact that **mé-** encodes the notion "partially realized", which is semantically somewhere in between realis and irrealis modes, means that it is able to participate in the system of modal distinctions characteristic of consecutivized structures.

A final note on the origin of **mé-**: it seems probable that it is derived from the verb **emèe**, *to do again*, which still exists as a lexical verb in the language. There is a similar marker **má** in Bamileke-Fe'fe', which Hyman (1971 and p.c.) assumes is the prenasalized version of **bá**, *to be* ie. < ***m-bá**; but since Mundani does not possess a copula

of the form **bá**, it may be that Mundani **mé-** and Fe'fe' **má** do not share a common source.

6.2 Modal Marking

In addition to tense-aspect markers, INFL might be expected to contain overt marking of modal categories. At least six modal categories are grammaticized in Mundani: realis, irrealis and obligational; hypothetical, concessive and counterfactual. In chapter 5 it was suggested that realis and irrealis morphemes fall under the non-finite [-TENSE] component of INFL. This component will be examined in detail in chapters 8 and 9. In section 6.2.1 we shall look briefly at obligational forms which, unlike R/IR prefixes, occur in finite clause types. In 6.2.2, we shall examine conditional sentences in which hypothetical, concessive or counterfactual modal marking appears.

6.2.1 Obligational

The obligational form (OBL) resembles the perfective in that it has a null phonetic realization in TENSE. It can be differentiated from the perfective by a low tone on the subject pronoun; also, in some subsets of verbs, by the tone pattern on the verb stem:

(32)

	Obligational	Perfective
a.	**Bì ø tsú** L ø H *You(p) should come down.*	**Bí ø tsú** H ø H *You(p) have come down.*
b.	**Bì ø tséké** L ø HH *You(p) should remain.*	**Bí ø tsékè** H ø HL *You(p) have remained.*

Since not all obligational forms display a separate tone pattern from perfective forms, it is the low tone subject pronoun that must be regarded as the distinctive characteristic of the obligational modal category. For the moment it will be assumed that this low tone can be assigned to TENSE in the syntax (see 7.1 for further discussion).

Note that the obligational form imposes strict constraints on the content of TENSE. For example, an obligational may not be combined with overt tense marking of any kind (33a):

(33)a. ***Bɨ ø sà'a tsu**
you(p) OBL F2 come:down
You(p) should come down (tomorrow).

Where it is required to specify the time-frame, a temporal adverbial such as **atetsɔ'**, *tomorrow morning*, may be used (33b):

(33)b. **Bɨ ø tsu atetsɔ'**
you(p) OBL come:down LOC:morning
You(p) should come down tomorrow morning.

Alternatively, a tense-marker such as **sà'a** (Future Tomorrow), which normally has the status of an auxiliary verb, may be promoted to become the main verb in a separate clause, followed by a regular obligational clause with no tense marking, thus forming a biclausal structure (33c):

(33)c. **Bɨ -a sà'a bɨ ø tsu**
you(p)-F F2:main verb you(p) OBL come:down
You(p) should come down (tomorrow).

Co-occurrence of the obligational with aspectual marking is also prohibited, with the exception of incompletive **mé-**. The combination of the obligational with **mé-** conveys an obligation to *continue* to do something that is already in progress but only partially realized:

(34) **Bɨ ø mé- tseke wu nɔ̀ bɨtòba**
you(p) OBL INC-remain only together 2pl + 3sg
You(p) should continue to remain united with him.

The only other item that may appear under TENSE in an obligational clause is the negative marker **kā** (see 6.3 below).

6.2.2 Modal categories in conditional clauses

Conditional (antecedent) clauses display three kinds of marking that are of interest to us in relation to modality: hypothetical, concessive and counterfactual. These clauses are described more fully in Parker 1991a, where it is argued that they have *subordinate* status: so by including hypothetical, concessive and counterfactual marking in our account of modal marking we are taking a wider view than Palmer who regards "grammatical *main* clause modality" as basic (Palmer 1986:15 - the italics are mine).

6.2.2.1 Hypothetical

The antecedent clause of a hypothetical conditional sentence expresses a situation unrealized at the moment of utterance, and whose eventual realization seems unlikely. Nevertheless, it is assumed that if the antecedent proposition were to hold, the consequence proposition would also hold. The verb in the antecedent clause consists of the verb root, carrying its inherent (H or L) tone, followed by the high-tone "hypothetical" suffix **-á**. Examples are seen in (35).

(35)a. **N-dzé-á fǫ ko/m̀bə ma-a lùùla**
I-see-HYP buffalo COND I -F run:away
If I saw a buffalo I would run away.

b. **Tà kɨ́' -á apfə̀ am ko/m̀bə àghɨ akɔ̃**
he come-HYP LOC:compound my COND thing INDEF

ma ø ŋa atɔ̀ la a ǹtsè
I PF?/OBL? give him SUB it be:not
If he came to my compound, I would not give him anything.

The fact that the hypothetical modal marker is suffixed to the verb means that it falls under VP rather than the TENSE component of INFL at S-structure (or PF). We shall leave further discussion of this morpheme to section 7.4.2.2.

6.2.2.2 Concessive

In concessive conditionals, the antecedent clause indicates a condition that seems to be opposed to the assertion made in the consequence clause; so the sentence as a whole expresses a situation that is altogether contrary to normal expectations. The concessive notion is grammaticized by the auxiliary verb **màà** occurring immediately before another auxiliary or a main verb in the antecedent clause. The verbal status of **màà** is evidenced by the fact that the following verbal element appears in its consecutivized form, with a realis prefix. **Màà** can be translated into English as *even (if)*. Present and future tense examples are seen in (36) and (37).[5]

(36) Present tense concessive

Bɔ -ɔ̀ màà ŋ̀-kpà't-à wu a kàbɔ̀ŋ,
they-IMP CONC R-plan -IMP only OBJ evil

ko/m̀bə ntɨ̀ɨ̀ am aà m̀-bɔ̀
COND heart my IMP R-be:good
Even if they are planning only evil, I am happy.

(37) Future tense concessive

Ba-a màà ŋ̀-gà a- ǹtɔ' ko/m̀bə
we-F CONC R-go LOC-palace COND

bà ka ye a Fɔ̀ ziambɔŋ-a
we NEG:F see OBJ Fon himself-F
Even if we go to the palace, we shall not see the Fon himself.

6.2.2.3 Counterfactual

In counterfactual conditionals the antecedent clause consists of a proposition that is considered to be untrue, or at least highly unlikely. Such conditionals normally receive no special marking in Mundani; but there is one exception. In past tenses, the antecedent clause is marked by the expression **ghɨ ale**, *P1-thus*, the P1 auxiliary tense marker plus a manner adverbial, followed in turn by the main verb in its consecutivized form with realis marking. An example is seen in (38).

(38) **Tà ghɨ ale ǹ-tsɔ èkab wu ko/m̀bə**
he P1 thus R-steal money DEF COND

tà bakà su abua bɔkefen
he NEG:PF tell:PF to policemen
If he had stolen the money, he would not have told the police.

Auxiliaries under TENSE normally have impaired syntactic capacity, which means that, amongst other restrictions, they cannot be followed by an NP complement or adverbial modifier. So the presence of the adverbial **ale** in (38) raises the question of whether the expression **ghɨ ale** *is* an element under TENSE, or an independent VP linked in some kind of serial relationship with **ǹ-tsɔ**, *steal*. It would be possible to argue for either analysis; but since **ale** cannot be removed from the sentence without destroying the counterfactual interpretation of the main verb, we choose to analyse **ghɨ ale** as a compound marker of the modal category "counterfactual", situated under TENSE in the syntax.

6.3 Negation

The TENSE component of INFL may contain a marker of clause negation. Clause negation has already been presented in section 3.3.2; but the summary of NEG marking given there is repeated for convenience in (39). The basic form of the NEG morpheme is **ka**; but tonal distinctions and minor segmental variations such as an echo vowel following a glottal stop in certain past tenses, or the prefix **bă-** in the perfective, characterize the different tenses, aspects and modal categories.

(39)

Past Tenses	P3	Past Before Yesterday	**kā'ā**
	P2	Past Yesterday	
	P	General Past	**kà'à**
	P3	Past Today	**kà**
Future Tenses	F	General Future	
	F1	Future Today	
	F2	Future Tomorrow	**kā**
	F3	Future After Tomorrow	
Narrative Tense			**kà**
Tenseless Forms	Perfective		**bākà**
	Imperfective		**kà**
	Obligational		**kā**

In the linear sequence of the clause, the NEG morpheme appears immediately after the subject with its clitic or particle tense-aspect marker (where present), and immediately before an auxiliary or main verb. This ordering is illustrated in (40a), which repeats sentence (47a) in section 3.3.2.1.

(40)a. **Tà-à kà'à lô' ŋ̀-gà**
he-P2 NEG:P2 P1 R-go
He did not go (yesterday, after something else had occurred).

The linear order of elements in (40a) can be schematized as follows:

(40)b.

[S] + [TENSE:CLITIC] + [NEG] + [TENSE:AUX] + [MAIN:VERB]

The syntactic status and properties of NEG marking will be investigated in 7.1.2.3. and 7.2.

6.4 Summary of TAM and NEG marking

The different elements that comprise the system of tense-aspect-modality and negative marking are set out in (41). Three points should be noted:

(i) Tense categories are encoded not only in tense markers per se, but also in negative markers and to a lesser degree in imperfective marking.

(ii) The layout of (41) does not in any way reflect the linear ordering, structural relationships, or co-occurrence restraints, of the different elements within complex TENSE, questions which will be addressed in section 6.5.

(iii) Several items listed do not fall under TENSE at all at S-structure, but under some other phrasal projection. They are included here on the assumption that all of them (with the possible exception of the postverbal hypothetical and imperfective markers) are base-generated under TENSE.

(41) Summary list of TAM and NEG markers

Tense markers	Past	P1	**ghɛ̀/lɔ̀'/lí**
		P/P2	**-à**
		P3	**-lè**
	Future	F	**-á**
		F1	**ghɛ̄/lɔ̀'ɔ́**
		F2	**sà'ā**
		F3	**lí**
	Narrative		**lí, low tone**
	"Present"		**zero marking**
Aspect markers	Perfective		**ø**
	Imperfective	Past	**wūā**
		Future	**nāá wúá**
		"Present"	**-a**
			(+ -a verb sx)
	Progressive		**nà**
	Incompletive		**mé-**

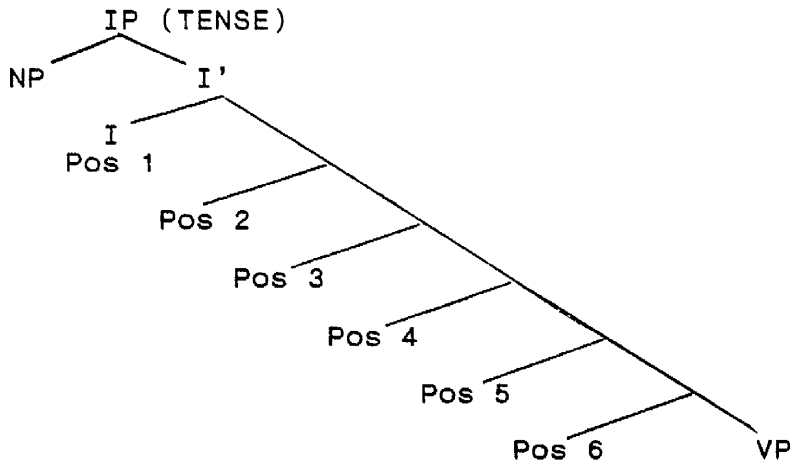
Modal markers	Obligational		low tone
	Hypothetical		(-á verb sx)
	Concessive		**màà**
	Counterfactual Past		**ghɨ ale**
Negative markers	Past	P1	**kà**
		P/P2	**kà'à**
		P3	**ká'á**
	Future	F/F1/F2/F3	**ká**
	Narrative		**kà**
	"Present" Perfective		**bákà**
	"Present" Imperfective		**kà**
	Obligational		**ká**

6.5 Complex TENSE

Most of the tense, aspect, modal and negative markers summarized in (41) may appear in a variety of combinations within TENSE. A full description of such combinations is found in Parker 1985c; here we present an outline only.

Two preliminary observations are necessary. First, the left-to-right linear ordering of elements under TENSE will be described in terms of Position 1, Position 2...etc. These positions are accommodated within X-bar structure roughly as diagrammed in (42). We shall attempt to refine and fill out this structure in chapter 7, where we examine the categorial status of the various components, the licensing conditions on nodes, and some of the difficulties that such a configuration raises within the grammar as a whole.

(42)



Secondly, a distinction will be made between tense-aspect-mood (TAM) markers that have non-verbal status ie. which do *not* have the morphological, tonal and syntactic properties of verbs (even if they can be shown to be derived from verbs historically), and those that are clearly derived from independent verbs and which have retained certain verbal properties. The latter we shall provisionally categorize as AUX.

(43)

NON-VERBS

Tense	P3	**-lè**		
	P/P2	**-à**		
	F	**-á**		
	NARR	**low tone**		
Aspect	IMP	**-a**		
	PF	**ø**		
	PROG	**nà**		
	INC	**mé-**		
Modal	OBL	**low tone**		

AUX

Tense	P1	**ghɨ́**	from eghɨ̌	*to do/make*
		lɔ̀'	from elɔ̀'ɔ	*to move/leave*
		lí	from eli	*to sleep/pass the night*
	F1	**ghɨ̌**	from eghɨ̌	*to do/make*
		lɔ̀'ɔ	from elɔ̀'ɔ	*to move/leave*
	F2	**sà'a**	from esà'a	*to wake up*
	F3	**lí**	from eli	*to sleep/pass the night*
	NARR	**lí**	from eli	*to sleep/pass the night*
Aspect	IMP-P	**wúá**	from ewu	*to be*
	IMP-F	**náá wúá**	from ewu	*to be*
Modal	CONC	**màà**	source verb unknown	
	CFACT	**ghɨ ale**	from eghɨ̌	*to do/make*

(43) includes only items assumed to be base-generated under TENSE. As already noted, some of these items are associated with different syntactic categories at subsequent levels of representation. For example, the low tone marking the obligational modal category is docked onto the subject pronoun at S-structure (or at PF) ie. it attaches itself to the NP in the specifier position of TENSE; the incompletive aspect marker **mé-** is prefixed to the main verb to its right, thus appearing under VP at S-structure or PF; the low tone marking narrative tense appears on the main verb root ie. also under VP; in

negative sentences the General Future marker **-á** surfaces in VP-final position at S-structure (see 3.3.2.2).

The concessive marker **màà** is regarded as belonging to the category AUX, since it carries independent stress, and triggers the consecutivization of the main or auxiliary verb that immediately follows it in the linear sequence (see 6.2.2.2 above). **Màà** does not, however, correspond to any independent verb in the present-day language, and its source verb is unknown.

Incompletive **mé-**, on the other hand, is probably derived from **ɛmèe**, *to do again*, which is still used as a (somewhat defective) lexical verb in the language. **Mé-** as a marker of incompletive aspect, however, does not carry independent stress, and has lost all the morphological, tonal and syntactic properties of a verb. It is therefore grouped with other non-verbal TAM markers.

These two examples highlight an historical development along a continuum, from lexical function as a verb to grammatical function as a marker of a TAM category. **Màà** retains just sufficient "verbness" to be classified as AUX, although its modal function is a grammatical one and its historical source is lost; **mé-** has progressed further along the continuum in the direction of a purely grammatical marker - even though its verbal origin is still clear.

6.5.1 Linear ordering

Where two or more elements combine to form complex TENSE, certain observations can be made about their linear order.

(i) Position 1 The two options for filling this position may be summarized as follows:

either (i) **nà - a**
PROG-IMP

or (ii) any single non-verbal TENSE item from the following set:

P3	**-lè**
P/P2	**-à**
F	**-á**
IMP	**-a**
PF	**ø**
OBL	**low tone**

In the case of (ii), an item with segmental content will encliticize onto the final element of the NP in subject position; where the low tone obligational marker is selected, it will dock onto the preceding subject pronoun. Options (i) and (ii) are illustrated in (44a), and (44b-f) respectively.

(44)a. **Bèzi ǹdɨk bu na -à**
women white DEF PROG-IMP

ǹ-tsèk-â apfə -am
R-stay-IMP LOC:compound my
The white women are staying in my compound.

b. **Tà-lè lô' ǹ-dzə anə yu me- màke make**
he-P3 P1 R-hear matter DEF INC-doubt doubt
He heard the matter (before yesterday, after something else had happened), and was very doubtful/surprised.

c. **Tà -à wua m̀-bààl -à akə̀ vi**
she-P2 IMP:P R-carry:on:back-IMP basket her
She was carrying her basket on her back.

d. **Bá-ā sà'a e- kɨ'ɨ e- ŋa èghɨ bê bu**
we-F F2 IR-come IR-give things your(s) DEF
We shall come (tomorrow) and give you your things.

e. **Tà-à ǹ-tsek-â ŋ̀-gɨ-à àfà' bɔ tò**
he-IMP R-stay-IMP R-do-IMP work 3 + 3
He is always working with him.

f. **Tà nê, bɔ̀ (bɔ + low tone)**
he say:that they they + OBL

ŋa èkab wu
give money DEF
He said that they should give the money.

(ii) Position 2 is filled optionally by a negative marker that accords with the tense-aspect specification of the clause:

(45) **Bɨ -à kà'à kɨ'ɨ̂ tesi**
you:PL-P2 NEG:P2 come yesterday
You(p) did not come yesterday.

(iii) Positions 3, 4 and 5 may be filled by items taken from the set AUX in (43). The possible combinations are subject to semantic constraints that are examined in section 6.5.2. In (46), all three AUX positions are filled; but note that whereas cases of two AUX

elements are common, a combination of three is rather rare.

(46) **Ta-a ghɨ̃ e- lɔ̀'ɔ e- sà'a e -dzə̃**
he-F F1 IR-F1 IR-F2 IR-leave
AUX AUX AUX
He will leave tomorrow, after something else has happened.

(iv) Sequences of verbal elements: One or more AUX elements plus a main verb form a sequence of verbal items that will follow the general pattern for such sequences in the language: that is, each verbal element after the first - whether AUX or V - must appear in its consecutivized form, carrying a realis or irrealis prefix. In (47a) non-initial verbs carry realis marking; in (47b) they carry irrealis marking. The initial verb in the series - the AUX **ghɨ́/ghɨ̃** in (47a/b) - is not consecutivized.

(47)a. **Tà-à ghɨ́ ǹ-dɔ̀' ǹ-dzə̀ tesi**
he-P2 P1:AUX R-P1:AUX R-leave:V yesterday
He did leave yesterday, after something else had happened.

b. **Ta-a ghɨ̃ e- lɔ̀'ɔ e- sà'a e- dzə̃**
he-F F1 IR-F1:AUX IR-F2:AUX IR-leave:V
He will leave tomorrow after something else has happened.

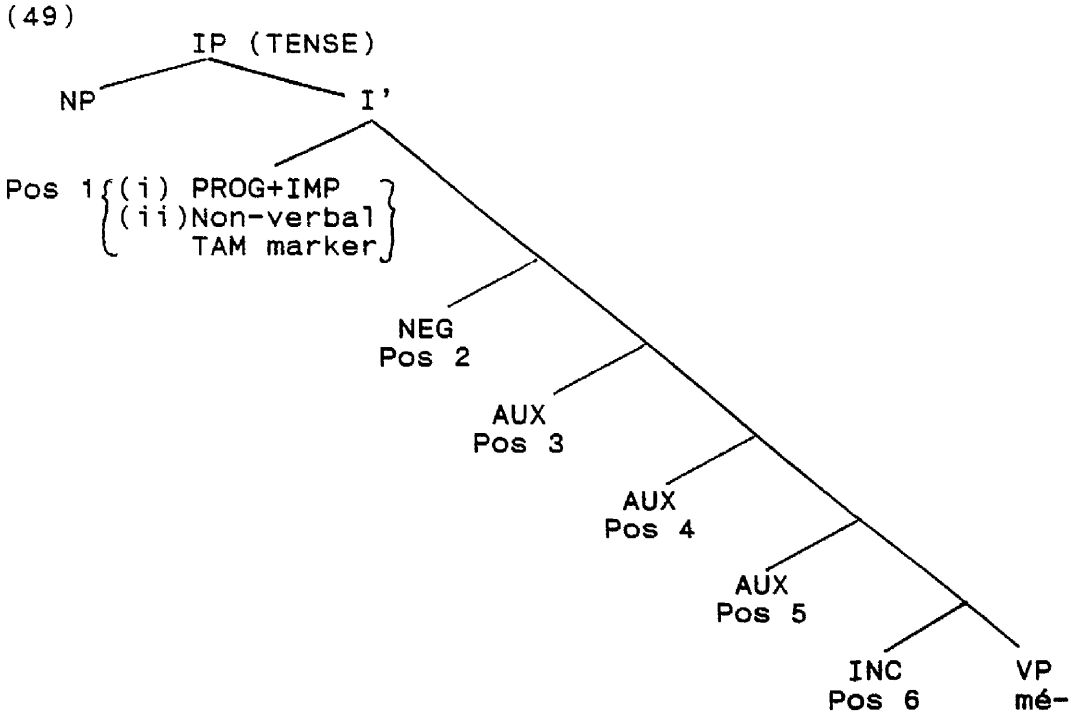
(v) Position 6 Although incompletive **mé-** is prefixed to the main verb and thus appears under VP in the surface structure, we assume that it is base generated under the TENSE component of INFL. No other item may intervene between **mé-** and the V to which it attaches itself (48):

(48) ***A -a mé- sà'a e- ghə̃ awen.**
you(s)-F PROG-F2:AUX IR-go LOC:market
You(s) will be going to market tomorrow.

For this reason we assign **mé-** to the final (right-most) position in complex TENSE in the underlying structure.

On the basis of these observations of linear order, we can fill out the structure in (42) as in (49):

(49)



In practice, not all of the intermediate projections in (49) would be present in a given clause: five seems to be the maximum that is acceptable in normal speech; two or three would be average.

6.5.2 Co-occurrence Restrictions

Constraints on co-occurrence of elements within complex TENSE depend on semantic factors that are only partially understood at present.

6.5.2.1 Progressive nà

Progressive **nà** is combined obligatorily with imperfective marking (6.1.2.2). Thus (23c) repeated here as (50) is ill-formed, since imperfective marking is absent:

(50) ***Mâ ø zə ǹdɨ èbem e- tò**
I PF hear how stomach AM-his

e nà ø dzû' la
it PROG-PF make:noise:PF SUB
I heard how his stomach made a noise.

6.5.2.2 Combinations of Two Tense Markers

Leaving aside aspectual and modal markers, we examine cases where two markers of tense categories co-occur within complex TENSE. There are two general constraints on possible combinations:

(i) The structure displayed in (49) rules out any combination where a non-verbal tense marker appears *following* a tense auxiliary.

(ii) A past tense marker may not co-occur with a future tense marker.

The most frequent type of combination has a P1 or F1 auxiliary following another auxiliary or a non-verbal tense marker. (51) displays the possible co-occurrences: column 1 represents the first tense marker in the combination, which will be either a clitic in position 1 or an auxiliary in position 3; the second column represents the P1 or F1 auxiliary that follows the initial tense marker.

(51)

Tense 1	Tense 2	
	P1	F1
P3	+	-
P2/P	+	-
P1	?+	-
F	-	=
F1	-	+
F2	-	+
F3	-	+

Note A plus sign indicates that the combination is permitted; a minus sign indicates that the combination is not permitted. The symbol = indicates that F+F1 is not formally distinct from F1. (This is because the General Future clitic -a is present in *all* future tense forms.) A question mark ? shows that there is doubt about some of the P1+P1 combinations (see the discussion below).

The pattern of restrictions seen in (51) underlines the general point made above, that past and future tense marking may not combine in a single clause.

As (51) shows, combinations of two P1 or two F1 AUX elements are attested. Since there is more than one marker available in both tenses, the combinations are charted in more detail in (52), where the first column shows the initial P1/F1 AUX, and the remaining columns the possible occurrences with a second AUX in the consecutivized form. A plus sign indicates that the combination is attested, a minus sign that it is not; a question mark indicates that there is doubt about a given combination (doubful cases will be discussed below).

(52)a. Co-occurrences of P1 markers

AUX 1	AUX 2		
	ŋ̀gɨ̀	ǹdɔ̀'	ǹdi
ghɨ̂	-	?+	?+
lɔ̂'	+	-	?+
li	-	?+	-

b. Co-occurrences of F1 markers

AUX 1	AUX 2	
	eghɨ̌	elɔ̀'ɔ
ghɨ̌	-	+
lɔ̀'ɔ	+	-

It will be seen in (52a/b) that a reduplication of the same P1/F1 marker within the same clause eg.*lɔ̂' ǹdɔ̀', *ghɨ̌ eghɨ̌, is disallowed. The sequence *li ŋ̀gɨ̀ is also not attested at all.

Other possible co-occurrences of tense markers have F2 or F3 following another future tense marker:

(53)

Tense 1	Tense 2	
	F2	F3
F	=	=
F1	-	?+
F2	-	?+
F3	+	?+

Note The combinations F+F2 and F+F3 are formally identical to F2 and F3 respectively (compare with F+F1 above). Four other combinations are attested; but those with F3 in second position are doubtful (see discussion below). F1+F2 and F2+F2 are not attested at all.

Let us consider now the sequences of tense markers that are queried in (51) through (53). In the case of P1 combinations in (51) and (52a), certain forms that at first sight look like P1 markers in second position are in fact interpreted as lexical verbs - either obligatorily, like the realis form **ǹdi** (54), or optionally, like the realis form **ǹdɔ̀'** (55).

(54) P1 + ǹdi

a. **Tà ghɛ̀ ǹ-di ŋ̀-kɛ̀'ɛ̀**
he P1 R-sleep R-come
Earlier today (P1), he did (ghɛ̀) sleep (ǹdi) and come.

b. **Tà lɔ̂' ǹ-di ŋ̀-kɛ̀'ɛ̀**
he P1 R-sleep R-come
(i) Earlier today (lɔ̂') he slept (ǹdi) and came.
(ii) He then (lɔ̂') slept (ǹdi) and came.

(55) P1 + ǹdɔ̀'

a. **Tà ghɛ̀ ǹ-dɔ̀'** **ŋ̀-kɛ̀'ɛ̀**
he P1 R-P1/leave R-come
(i) Earlier today (P1) he did (ghɛ̀) then (ǹdɔ̀') come.
(ii) Earlier today (P1) he did (ghɛ̀) leave (ǹdɔ̀') and come.
(iii) Earlier today (P1) he had (ghɛ̀) left (ǹdɔ̀') and come.

In reading (i) of (55a), **ǹdɔ̀'** functions within the system of time reference, while in readings (ii) and (iii) it is interpreted as a lexical verb.

b. **Tà lí ǹ-dɔ̀'** **ŋ̀-kɛ̀'ɛ̀**
he P1 R-P1/leave R-come
(i) Earlier today (P1) he slept (lí) and then (ǹdɔ̀') came.
(ii) Early this morning (lí) he left (ǹdɔ̀') and came.

The two readings for (55b) indicate that this sentence does not contain a sequence of two tense markers at all, since either **lí** or **ǹdɔ̀'** will be read as a lexical verb.

Where the non-consecutivized forms **lí** and **lɔ̂'** appear following a non-verbal tense marker and preceding a "main" verb, they do not receive a lexical interpretation like their realis-marked counterparts, but function within the system of absolute or relative time reference:

(56)a. P3 + lí

Tà lè lí ŋ̀-kɨ̀'ɨ̂
he P3 P1 R-come
He came before yesterday (lè), early in the morning (lí).

b. P2/P + lɔ̂'

Tà-à lɔ̂' ŋ̀-kɨ̀'ɨ̂
he P2 P1 R-come
He came yesterday (-à), after something else had happened (lɔ̂').

The P1 form **ghɨ̂**, or **ŋ̀gɨ̀** with realis marking, never receives a lexical interpretation following another tense marker and preceding a "main" verb:

(57)a. P3 + ghɨ̂

Tà lè ghɨ̂ ŋ̀-kɨ̀'ɨ̂
he P3 P1 R-come
He came before yesterday (lè), before something else happened (ghɨ̂).

b. P1 + ŋ̀gɨ̀

Tà lɔ̂' ŋ̀-gɨ̀ ŋ̀-kɨ̀'ɨ̂
he P1 R-P1 R-come
(i) Earlier today (lɔ̂'), he did (ŋ̀gɨ̀) come.
(ii) Earlier today (lɔ̂'), he had (ŋ̀gɨ̀) come.

We turn from P1 tense marking in second position, to clauses that appear to contain a combination of two future tense markers with F3 **eli** in second position. The combinations were charted in (53). In these instances, the F3 indicator generally (but not necessarily) functions as a lexical verb meaning *sleep, spend the night*, and forms a consecutivized sequence with the "main" verb that follows it. Examples are seen in (58) through (60).

(58) F1 + eli

Ta -a ghɨ̃/lɔ̂'ɔ e- li e- bi
she-F F1 IR-F3 IR-give:birth
Later today (ghɨ̃/lɔ̂'ɔ) she will spend the night (eli) giving birth.[6]

(59) F2 + eli

Ta -a sà'a e- li e- bi
she-F F2 IR-spend:night IR-give:birth
Tomorrow (sà'a) she will spend the night (eli) giving birth.

(60) F3 + eli

Ta -a li e -li e -bi
she-F F3 IR-spend:night IR-give:birth
Some time after tomorrow (li) she will spend the night giving birth.

In contrast to eli in second position before a "main" verb, an F1 or F2 marker in this environment will never be interpreted as a lexical item:

(61) F1 + F1

a. **Ta-a ghɨ̃ e- lɔ̀'ɔ e -kɨ'ɨ**
he-F F1 IR-F1 IR-come
Later today, he will (ghɨ̃) then (elɔ̀'ɔ) come.

b. **Ta-a lɔ̀'ɔ e- ghɨ̃ e- kɨ'ɨ**
he-F F1 IR-F1 IR-come
Later today (lɔ̀'ɔ), he will (eghɨ̃) come.

(62) F2 +F1

Ta-a sà'a e- lɔ̀'ɔ e- kɨ'ɨ
he-F F2 IR-F1 IR-come
He will then (elɔ̀'ɔ) come tomorrow (sà'a).

(63) F3 + F1

Ta-a lí e- lɔ̀'ɔ e- kɨ'ɨ
he-F F3 IR-F1 IR-come
He will then (elɔ̀'ɔ) come after tomorrow (lí).

(64) F3 + F2

Ta -a li e- sà'a e- bi
she-F F3 IR-F2 IR-give:birth
Some time after tomorrow (li) she will give birth on the next day (esà'a).

To summarize: certain forms that appear at first sight to be tense markers, and which occupy a position following another auxiliary tense marker and preceding a "main" verb, are in fact read as lexical verbs in some contexts, and form a consecutivized sequence with the following "main" verb. These forms are P1 **ǹdi** and **ǹdɔ̀'** and F3 **eli**.

Setting aside forms that are interpreted as lexical verbs, we can make certain generalizations about the functions of the different tense markers in the combinations charted in (51), (52) and (53). These generalizations are set out below, with references to examples which illustrate the functions described.

(i) A P1 or F1 auxiliary, regardless of its position in complex TENSE, will never determine absolute time reference if there is another tense marker available to do so. This fact suggests that P1/F1 auxiliaries are less firmly established as markers of tense in the absolute sense than other past or future tense markers (see the discussion below of the changing patterns of use of P1/F1 indicators).

This initial generalization can be extended further by asserting that absolute time reference will be established by the past or future tense marker with the highest number. That is, where P3/F3 co-occurs with P2/F2 or P1/F1, P3/F3 will determine absolute timing; where P2/F2 co-occurs with P1/F1, P2/F2 will determine the time-frame. Tense markers thus form a hierarchy with respect to the establishment of absolute time: 3 > 2 > 1. Examples of this phenomenon are seen in (56a/b), (57a), (62), (63) and (64).

Having arrived at these generalizations, we add a note of caution. At least one informant interpreted sentences (59), (60) and (64) as definite assertions (she *will* give birth), where the first future tense marker has a modal force and the second determines absolute time regardless of its number. The fact that individual speakers assign different readings to these combinations of two tense indicators suggests that they are not well established in the tense system as a whole.

(ii) A P1 tense marker **ghɛ̂** or **lɔ̂'** following another past tense marker (P2 or P3) will signal relative time reference as follows (see the chart in (10), section 6.1.1).

ghɨ̂ - relates the situation expressed by the main verb to another situation occurring *later* the same day; frequently translated as past anterior *had....*

lɔ̂' - relates the situation expressed by the main verb to another situation occurring *earlier* the same day; frequently translated as *then.*

Examples of these functions are seen in (57a) and (56b) respectively.

(iii) P1 auxiliary **lɨ́** following another past tense marker (P2 or P3) serves to further specify the time reference established by the other tense marker, limiting the action/event to the early morning period. This function is illustrated in (56a).

(iv) F1 auxiliary **ghɨ̃** preceded or followed by another future tense marker (F1, F2 or F3) will normally serve to reinforce the likelihood of a future tense event, or to make a definite statement or counter-assertion. That is, **ghɨ̃** has a modal force in this type of combination. Examples are seen in (61a/b).

(v) F2 **sà'a** in combination with F3 lɨ́ will refer relatively to a day following the absolute time established by F3: see example (64).

(vi) Two P1 or two F1 markers may combine. Their functions in first and second positions in such a combination are summarized in (65). Sample sentences are referred to in the chart.

(65) Combinations of two P1 or two F1 auxiliaries

Lexical Verb	TNS	AUX 1	AUX 2
eli to sleep	P1	**lí** (55b) (- lexical verb) - further specification of tense P1 (early in the morning)	**ǹdi** (54a/b) (- lexical verb)
eghɨ̀ to do	P1	**ghɨ̂** (54a) - definite/counter-assertive (did..) - past anterior (had..)	**ŋ̀gɨ̀** (57b) - definite/counter-assertive (did..) - past anterior (had..)
	F1	**ghɨ̄** (61a) - definite/counter-assertive (will..)	**eghɨ̄** (61b) - definite/counter assertive (will..)
elɔ̀'ɔ to move to leave	P1	**lɔ̀'** (57b) - P1 tense marker (bleached form)	**ǹdɔ̀'** (55a/b) (- lexical verb) - relative time ref. (then..)
	F1	**lɔ̀'ɔ** (61b) - F1 tense marker (bleached form)	**elɔ̀'ɔ** (61a) - relative time ref. (then..)

Note the wide variety of interpretations assigned to P1/F1 auxiliaries in (65). Depending on a given combination, the P1/F1 marker may...

- be used to specify absolute time (past today, future today)
- add further precision to the absolute time reference already established (this is the case only for P1 **lí**, *past today early in the morning*);
- encode relative time (before another action/event ie. past anterior *had..* ; after another action/event ie. *then..*);
- develop a modal function (definite, counter-assertive) alongside its function within the system of tenses.

This complexity prompts us to suggest a possible three-stage historical development of P1/F1 marking in an attempt to account for the synchronic facts:

Stage 1 The lexical verbs **eli**, **eghɨ̀** and **elɔ̀'ɔ** are adopted as P1/F1 tense markers, with the subsidiary functions of further specifying absolute time (**eli**) or of indicating relative time (**eghɨ̀**, **elɔ̀'ɔ**).

Stage 2 The subsidiary functions are seen to be useful ones throughout the entire tense system; so P1/F1 auxiliaries are combined with other tense markers. In such combinations they undergo a variety of semantic shifts.

Stage 3 The generalization of the P1/F1 auxiliaries throughout the tense system leaves tenses P1 and F1 with less distinctive marking. By way of compensation, and also by analogy with combinations of another tense with P1/F1, sequences of two P1 or two F1 auxiliaries begin to appear.

Since these developments are still in progress, the interpretation of the different markers in a P1+P1 or F1+F1 construction still lack sharp definition and are subject to speaker variation. It seems that lɔ̂' (P1) and lɔ̌'ɔ (F1) are generally bleached forms in initial position, functioning simply as a P1 or F1 tense marker. Ghɨ̂ (P1) or ghɨ̌ (F1) appear to have acquired a "definite/counter-assertive" modal role. P1 li, on the other hand, retains its status as a lexical verb in many contexts.

In connection with Stage 2, note that the generalization of P1/F1 marking throughout the system affects not only the marked tenses in past and future, but also the unmarked "present" tense. P1 auxiliaries **ghɨ̂**, **lɔ̂'** and **li** may be combined with a "present" tense main verb, provided that both are also marked for imperfectivity (66):

(66)a. **Tà-à ŋ̀-gɨ̀-à ŋ̀-kɨ̀' -â**
he-IMP R-P1-IMP R-come-IMP
He comes regularly/from time to time.
(Emphasis on repetition of the action over a period of time)

b. **Tà-à ǹ-dɔ̀'-ɔ̀[7] ŋ̀-kɨ̀'â**
he-IMP R-P1 -IMP R-come
He comes regularly/from time to time.
(Emphasis on the action itself)

c. ***Tà-à ǹ-dì-a ŋ̀-kɨ̀' -â***
he-IMP R-P1-IMP R-come-IMP
He comes regularly (every day).

In (66a), the meaning yielded by P1 **ghɛ̂** is not surprising in semantic terms: in fact, **ghɛ̂** forms part of an habitual construction already seen in (26), section 6.1.2.2. The appearance of P1 **lɔ̂'** and **li** in (66b/c) is more difficult to account for: it may be that they are used only by analogy with **ghɛ̂**.

6.5.2.3 Combinations of three tense markers

In addition to the combinations of two tense markers, there is a bewildering array of possible combinations and permutations of three tense markers attested within complex TENSE. These fall into two main patterns:

(67)a. $\left\{\begin{matrix}P3\\P2\end{matrix}\right\}$ + P1 + P1

b. F1 + F1 + $\left\{\begin{matrix}F3\\F2\end{matrix}\right\}$

In (67a), P3 or P2 establishes the absolute time reference. In (67b) the absolute timing is fixed by F3 or F2. Note again the general principle that the time-frame is determined by the tense marker with the highest number.

Co-occurrences of two P1 or two F1 auxiliaries in combination with another tense are displayed in (68) and (69) respectively. Once more, a plus signals that the combination is acceptable; a minus that it is unacceptable. The symbol ? signals that it is of doubtful grammaticality.

(68) Co-occurrence of P1 auxiliaries with P3/P2

Tense 1(P3/2)	Tense 2 (P1)	Tense 3 (P1)		
{-lè (P3) / -à (P2)}		ŋgɛ̀	ndɔ̀'	ndi
	li	-	+	-
	ghɛ̂	-	+	-
	lɔ̂'	?	-	?

In this table, the combinations **li ndɔ̀'** and **ghɛ̂ ndɔ̀'** are grammatical. The sequences **lɔ̂' ŋgɛ̀** and **lɔ̂' ndi** are doubtful. Other permutations are unacceptable.

(69) Co-occurrence of F1 auxiliaries with F3/F2

Tense 1 (F1)	Tense 2 (F1)		Tense 3 (F3/F2)
	eghɨ̄	elɔ̀'ɔ	{eli (F3) / esà'a (F2)}
ghɨ̄	-	+	
lɔ̀'ɔ	+	-	

Concentrating on the combinations that are clearly grammatical, the following generalizations can be made about the interpretation of P1/F1 auxiliaries in these "trios", regardless of their linear position in the sequence:

(70)

Verb	TNS	AUX	Meaning	Function
eli to sleep	P1	lí	early in the morning	refinement of absolute time
eghɨ̄ to do	P1	ghɨ́	definite/counter-assertive	modal
	F1	ghɨ̄	definite/counter-assertive	
elɔ̀'ɔ to move	P1	lɔ̂'	after another action or event	relative time ref.
	F1	lɔ̀'ɔ	after another action or event	

Examples of these functions are seen in (71) and (72):

(71) Past Tenses

a. **Tà-lè li ǹ-dɔ̀' ǹ-dzà**
he-P3 P1 R-P1 R-leave
He left before yesterday (lè), early in the morning (li), after doing something else or after something else had happened (ǹdɔ̀').

b. **Tà-à ghɨ́ ǹ-dɔ̀' ǹ-dzà**
he-P2 P1 R-P1 R-leave
He did (ghɨ́) leave yesterday (-à), after doing something else or after something else had happened (ǹdɔ̀').

(72) Future Tenses

a. **Ta-a ghɨ̌ e- lɔ̀'ɔ e- sà'a e- dzə̃**
he-F F1 IR-F1 IR-F2 IR-leave
He will (ghɨ̌) leave tomorrow (esà'a) after doing something else or after something else has happened (elɔ̀'ɔ).

b. **Ta-a lɔ̀'ɔ e- ghɨ̌ e- li e- dzə̃**
he-F F1 IR-F1 IR-F1 IR- leave
He will (eghɨ̌) leave after tomorrow (eli), after doing something else, or after something else has happened (elɔ̀'ɔ).

6.6 Summary

In this chapter, we have presented an overview of the different markers of tense, aspect, modality and negation that fall under the TENSE component of INFL, their linear ordering, and their possible co-occurrences.

In terms of semantic shifts, the system of TAM marking is unstable. Speakers disagree in their judgments of the acceptability and correct interpretation of combinations of elements within complex TENSE. The semantic roles of P1/F1 auxiliaries are particularly confusing and subject to speaker variation, suggesting that the grammaticization of these verb forms is a relatively recent development.

The TAM system is also in a state of flux from the syntactic point of view. In the present state of the language, individual TAM markers have reached different points along the continuum between full lexical verbs and function words: some retain verbal characteristics such as independent stress, the ability to inflect and/or to trigger consecutivization of a following verb form; others have lost all signs of "verbness" to function as mere grammatical markers; and amongst these latter forms, some have become associated with, or even incorporated into, words that are situated outside TENSE. The syntactic status and properties of the different items under TENSE will be discussed further in chapter 7.

CHAPTER 7 - THE CATEGORY TENSE: MORPHOSYNTACTIC AND SYNTACTIC PROPERTIES

7.0 Introduction

The properties of what we have termed the TENSE component of INFL are investigated in two main ways: (i) descriptively, in terms of some of the chief morphosyntactic characteristics of elements under TENSE (7.1); (ii) analytically, in terms of the syntactic structures involved. In the latter respect, we discuss the licensing of nodes under complex TENSE (7.2); the interrelationships between tense, aspect and modal marking, and the case for positing a separate phrasal projection for aspect (7.3); also the complex problems posed by imperfective marking, which is compared with the indicators for the hypothetical modal category and for the general future tense (7.4).

7.1 Some Morphosyntactic Properties of Elements under TENSE

This section focuses on two main kinds of item appearing under TENSE: clitic tense-aspect-modal (TAM) markers, and verbal elements (auxiliaries).

7.1.1 Evidence for Cliticization

It will be recalled from section 6.5.1 that the initial position under complex TENSE may be occupied by any one of the following items:

either (i) **nà -a**
PROG-IMP

or (ii) any single item from the set

P3	**-lè**
P/P2	**-à**
F	**-á**
IMP	**-a**
PF	**ø**
OBL	**low tone**

In the case of option (i), progressive **nà** carries stress and is regarded as an independent word. It is followed obligatorily by the imperfective marker **-a** which attaches itself leftwards, to **nà**.

Where option (ii) is selected, and the marker has segmental content, it does not have the status of an independent word, but will attach itself to whatever item

is immediately to its left: that is, to the final element in the NP in subject position. (Finite clauses that contain these TAM indicators must have an overt subject.) Where the low tone obligational marker is selected, it will also dock leftwards, onto the preceding subject pronoun. (Note that the subject position [Spec,IP] will always be filled by a pronominal form in obligational clauses. An NP with a nominal head referring to the actor/agent will occupy the TOPIC position.[1])

We shall claim that the process of leftward attachment undergone by the set of markers in (ii) is one of encliticization. At least four factors point to this conclusion: the placement of stress; vowel assimilation; Meeussen's Rule of high tone lowering, and (indirectly) consonant deletion. For a full discussion of the defining characteristics of clitics, see Klavans (1985).

7.1.1.1 Stress Placement

In the sentences in (1), the symbol " indicates that the following syllable carries (primary or secondary) stress.[2]

(1)a. **"Tà-lè "ghâ "apfə̀**
he-P3 go LOC:compound
He went home (before yesterday).

b. **Wạ "wu -à "kɨ́'ɨ́**
child DEF-P2/P come
The child came (yesterday/at some time in the past).

c. **"Bɔ -ɔ "sà'a e- "dzə̃**
they-F F2 IR-come:out
They will come out (tomorrow).

d. **Mbè "waa -à ǹ-"gẹ̀n-à "kpàlakpàla**
fellow this-IMP R-walk-IMP quickly
This fellow is walking/walks quickly.

The T/A markers underlined in (1) neither carry stress themselves, nor cause stress to shift in adjacent constituents. For the purposes of stress placement, they are simply ignored, and must therefore be distinguished from full words or stems that may carry stress (nouns, verbs, adjectives, etc.). However, the fact that these T/A items do not participate in the stress system tells us nothing about their morphosyntactic or phonological constituency.

7.1.1.2 Vowel Assimilation

Where the position 1 T/A marker consists of a vowel only (as opposed to a CV structure such as P3 -lè), and where the immediately preceding item within the subject NP ends in the back rounded vowel ɔ, the vowel of the T/A morpheme assimilates to ɔ:

(2) **Bɔ -à ǹ-dà' -à → bɔɔ̀ ǹdà'à**
they-IMP R-talk-IMP *They are talking.*

The assimilation rule operative in (2) may be schematized as a→ɔ/ɔ—. It is one of only two vowel assimilation rules in the language. The other is e→V /V — : that is, the assimilation of e to a preceding vowel of *any* other quality, resulting in a very slight lengthening of that vowel. Since e never occurs as a Position 1 item under TENSE, this rule is not relevant to the T/A morphemes under discussion; but it *is* relevant to wider considerations of the domains within which vowel assimilation and other phonological rules apply.

Vowel assimilation rules operate within the restricted domains summarized in (3). The domains are enclosed in braces; AM represents an Associative Marker.

(3)a. Nominal Domain {Nominal Stem + AM} + Nominal Stem
where AM consists of a vowel only.

b. Verbal Domain {V Stem + Inflectional Suffix}

c. Locative Domain {LOC + Class Prefix} + Nominal Stem

d. TENSE Domain $[...\{\ X\ \}_{NP} + [\ \ Y\ \}_{TENSE}.....]$
where X is a lexical stem in final position under NP and Y is a position 1 TAM morpheme under TENSE.

An example of vowel assimilation under each domain is seen in (4).

(4)a. Nominal domain **àtɔ́ŋ + á fo̱**
voice,c1 + AM,c1 chief
→ **àtɔ́³ + á fo̱**
→ **àtɔ́ɔ́⁴ fo̱**
The chief's voice (=authority).

b. Verbal domain **Tà-à ǹ-tɔ́ + á**
he-IMP R-call + IMP
→ **Tàà ǹtɔ́ɔ́**
→ **Tàà ǹtɔ̃**[5]
He is calling.

c. Locative domain **á + è- wén**
LOC + class px. market
→ **á:wén**
to market

d. TENSE domain **Bɔ́ + á kɨ́'ɨ́**
they + F come
→ **Bɔ́ɔ̃**[4] **kɨ́'ɨ́**
They will come.

Note that the locative domain (3c/4c) is the only one in which the first item - the locative marker á - is not a lexical stem. However, in so far as locative á sometimes carries stress and thus behaves phonologically more like a lexical stem than a function word, this domain can be regarded as parallel to the other three.

Where the vowel sequences ɔ + a or V + e occur outside these four domains, the assimilation rules will not apply, as illustrated in (5) through (7). The relevant vowel sequences are underlined.

(5) **Tà ø bû' á**[6] **màm- bɔ́ -á**
he PF PF:begin LOC class-fear-NOM
6a px.
He began to be afraid.

Màmbɔ́á is a gerund belonging to class 6a; so the juxtaposition of ɔ and a does not occur in any of the domains defined in (3), and assimilation does not apply.

(6)a. **Tà ká sɔ̀ -á**
he NEG:F suck-F
He will not suck.

Sɔ̀ is a verb; but the suffix -á is not inflectional as required in the verbal domain (3b). Instead, it is a future tense marker that would normally occur in preverbal position, under TENSE, but is displaced by negation to attach itself to *any* item (verb or other) in VP-final

position. Compare (6a) with (6b), where -á is attached to the adjective **kabɔ̀ŋ**, *bad*, and not to a verb at all.

(6)b. **Tà ka nɔ̀ŋe lob ɲ̃tsɔ̨̀ e- ghã̀ e- li**
he NEG:F leave house good IR-go IR-sleep

abeme lob kabɔ̀ŋ-á
inside house bad -F
He will not leave a good house to go and sleep in a bad one.

Since -á is non-inflectional, the vowel sequence ɔ + a in (6a) does not match any of the domains defined in (3) and assimilation fails to apply.

(7) **Ta-a lɔ̃'ɔ e- sà'a e- kɨ́'ɨ́**
he-F F1 IR-F2 IR-come
He will come tomorrow, after something else has happened.

The vowel sequences ɔ + e and a + e in (7) clearly do not fall under any of the domains shown in (3), so are not subject to assimilation.

Notice finally that whereas the nominal, verbal and locative domains defined in (3a/b/c) correspond to syntactic domains, this is not the case with the TENSE domain (3d). In the latter, the TAM marker forms a syntactic constituent with other TAM items under TENSE to the right of it, but the vowel assimilation rule shows that its phonological allegiance is leftward, with the final element under the NP in subject position. That is, its phonological attachment operates independently of its syntactic constituency. This is characteristic of the process of clitic attachment.

7.1.1.3 Meeussen's Rule

Three of the four domains where vowel assimilation is operative - the nominal, locative and TENSE domains - are also domains for the application of Meeussen's Rule of high tone lowering following another high tone. In Mundani, the lowered high is realized on the same phonetic level as a mid tone; so the rule might be formulated as H→H↓/H— or as H→M/H—. The application of this rule in nominal, locative and TENSE domains is seen in (8), (9) and (10) respectively. The lowered high tone is marked as a mid: ∇.

(8) Nominal domain

a. **àtɔ̀ŋ + á fɔ̀ → àtɔ̀ɔ̄ fɔ̀** *voice (=authority) of chief*
b. **àghɨ́ + á wᾴ → ághɨ́ā wᾴ** *thing of child*
c. **àkā + á ví → àkāā ví** *leg of wife*

(9) Locative domain

a. **á + álụ̄ → á ālụ̄** *on the path*
b. **á + Fụ́nì → á Fụ̄nì** *at Funi (name of a village quarter)*

(10) TENSE domain

a. **bó + á kɨ́'ɨ́ → bɔ́ɔ̄ kɨ́'ɨ́** *they will come*
b. **tá + á kɔ́ → táā kɔ́** *he will know*

In (9a) the nominal root **-lụ̄** has an inherent mid tone that is not the product of high tone lowering, since the root is outside the domain within which the lowering rule may operate (compare with (4c) where the high tone root **-wén** remains unaffected in the same context).

There are no instances in the data of high tone lowering in the verbal domain (3b), {verb stem + inflectional suffix}. The verb stem will in any case always carry a low tone when marked with an imperfective suffix, which is the most common form of inflection. The lowering rule does not apply to high tone verbs carrying the high tone hypothetical suffix eg. **Tà kɨ́'-á apfà am**, *If he came to my compound....* The reason for the non-application of the rule in this context may be related to the common origin of the hypothetical marker with the General Future marker **-á** (Parker 1991a). As we have already seen, General Future **-á** fails to undergo vowel assimilation in the verbal domain (6a). For a discussion of the relationship between imperfective, hypothetical and general future suffixes, see 7.4.2.

Evidence from Meeussen's Rule reinforces that from the vowel assimilation rules, to show that the bracketed domains in (3) have the status of phonological constituents. In the case of the TENSE domain in (3d), this means that the TAM morpheme is encliticized onto the final element of the subject NP, regardless of its conflicting syntactic constituency.

7.1.1.4 Consonant Deletion

Root-final consonant deletion is found in nominal and verbal domains, again supporting their status as phonological constituents. Examples are seen in (11) and (12), where root-final ŋ or b is deleted.

(11) Nominal domain

a. **àtɔ́ŋ + á fo̱ → àtɔ́ɔ̃ fo̱**
voice AM,c7 chief *voice (=authority) of chief*

b. **lɔ́b + ˋ wòt → lɔ̃: wòt**
house,c1 AM,c1 person *house of person*

(12) Verbal domain

a. **Tà-à ɲ̃-tɔ̀ŋ -á → Tàà ɲ̃tɔ̀á → Tàà ɲ̃tɔ̃**
he-IMP R-call-IMP *He is calling.*

b. **Tà-à (è-)sàŋ -à → Tàà (è-)sàà⁷**
he-IMP (R-)pull-IMP *He is pulling.*

Compare the forms in (11) and (12) with those in (13) and (14), where the nominal or verbal root falls outside the phonological domains under discussion and therefore keeps its final consonant:

(13) Nominal root

a. **[àtɔŋ yu] tà ø bɔ la**
NP voice DEF he PF have SUB
The authority that he has...

b. **Tà ø wu [abeme [lob yaa]]**
he PF be PP inside NP house this
He is in this house.

(14) Verbal root

a. **Lu̱ŋkɔ̀' è lɔ̀'ɔsi ɲ̃-tɔŋ**
cock it stand:up R-call
Cock stood up and crowed.

b. **Tà ø nɨŋ èli' wu (è-)sàŋ⁷**
he PF take rope DEF (R-)pull
He took the rope and pulled it.

Consonant deletion will not arise in the locative domain (3c), since by definition no lexical stem with a final consonant can appear in this context.

In the TENSE domain (3d), the final element under the NP in subject position will often be a lexical stem of some sort. As seen in (15), however, the final consonant of such an item does not delete as expected:

(15) TENSE domain

Bòt nyaŋ-a ǹ-dzʊ̀-a èghɨ̀ bɔb
people many-IMP R-buy-IMP things their
Many people are buying their things.

With the stipulation that consonant deletion is restricted to certain syntactic categories - namely, to nominal and verbal stems - the adjective **nyaŋ** in (15) would not undergo the C-deletion rule. It should be possible to test this hypothesis by inserting a nominal with a stem-final consonant in the subject position, without any following modifiers (16a); but speakers invariably reject such sentences, adding a subject pronoun between the nominal and the initial item under TENSE (16b):

(16)a. ***Abâ(ŋ) -à ǹ-dʉ̀ʉ̀t -à**
kolanuts-IMP R-tase:good-IMP
Kolanuts taste good.

b. **Abâŋ á -à ǹ-dʉ̀ʉ̀t -à**
kolanuts they-IMP R-taste:good-IMP

Following the analysis in 4.2.1.1, the subject pronoun **á** occupies the "normal" subject position ie. [Spec,IP], while the nominal **àbâŋ** occupies a higher IP adjunction (TOPIC) position, and thus falls outside the TENSE domain. Stem-final C-deletion does not occur and the test remains inconclusive.

C-deletion, then, provides direct evidence for only two of the four phonological domains under discussion: the nominal and verbal domains. Within these two domains, however, C-deletion coincides with other phonological processes such as vowel assimilation and high tone lowering which also appear in the locative and TENSE domains. The pattern of coincidences is charted in (17).

(17)

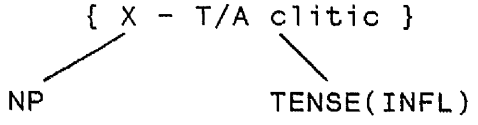
	DOMAINS			
	Nominal	Verbal	Locative	TENSE
Vowel assimilation	+	+	+	+
H tone lowering	+	-	+	+
C-deletion	+	+	ø	-

+ shows that the phonological rule is attested in a given domain.
- shows that the phonological rule is not attested in a given domain.
ø shows that the phonological rule is inapplicable to the given domain.

7.1.1.5 Summary

Phonological evidence of four different kinds tends to confirm that the TENSE domain schematized in (3d) does exist: that is, in the absence of progressive **nà**, the TAM morpheme in initial position under TENSE encliticizes onto the final element under NP in the subject [Spec,IP] position, to form a single phonological constituent. This TAM morpheme bears no syntactic or semantic relation to the NP element to which it attaches itself. Rather, its syntactic and semantic relations extend to the right: for example, the choice of TAM clitic crucially determines what may follow it within complex TENSE, and may also trigger morphological agreement (realis/irrealis prefixes and/or the imperfective suffix) on subsequent verbal elements under TENSE and/or on the main verb (see 7.4 and chapter 8 for details). The mismatch between phonological and syntactic-semantic allegiance is diagrammed in (18), where braces show phonological constituency and connecting lines show syntactic and semantic links.

(18)



7.1.2 Auxiliary Tense-Aspect Markers

We turn now to a second kind of element under TENSE: the verb-like items provisionally termed "auxiliaries". These items are listed in (34), section 6.5, repeated here as (19):

(19)

Tense	P1	**ghɨ́**	from **eghɨ̄**	*to do/make*
		lɔ̂'	from **elɔ̀'ɔ**	*to move/leave*
		lí	from **eli**	*to sleep/pass the night*
	F1	**ghɨ̄**	from **eghɨ̄**	*to do/make*
		lɔ̂'ɔ	from **elɔ̀'ɔ**	*to move/leave*
	F2	**sà'a**	from **esà'a**	*to wake up*
	F3	**lí**	from **eli**	*to sleep/pass the night*
	NARR	**lí**	from **eli**	*to sleep/pass the night*
Aspect	IMP-P	**wúá**	from **ewu**	*to be*
	IMP-F	**nàá wúá**	from **ewu**	*to be*
Modal	CFACT	**ghɨ́ ale**	from **eghɨ̄**	*to do/make*
	CONC	**màà**	source verb unknown	

7.1.2.1 Verb-like Properties of Auxiliaries

First note that in all but one case, **màà**, the items listed in (19) are derived from forms that function as full lexical verbs elsewhere in the language.

Secondly, the items in (19) display certain verbal characteristics. For example, they are subject to affixation like normal verbs: (20a) below shows realis marking of P1 **lɔ̂'**, irrealis marking of F2 **sà'a** is seen in (20b), and realis plus imperfective affixation of P1 **ghɨ́** in (20c). Which affixes will appear on a given auxiliary (and/or main verb) is determined by the item in initial position under complex TENSE. So in (20a) the P2 clitic **-à** triggers realis marking, and it would therefore be unacceptable to introduce an irrealis prefix into the sequence; in (20b), the F clitic **-á** triggers irrealis marking, and the insertion of a realis prefix would result in ungrammaticality; in (20c) the imperfective clitic **-a** causes all subsequent verbal items to carry both an imperfective suffix and a realis prefix.

(20)a. **Tà-à ghɨ́ <u>ǹ-dɔ̀'</u>⁸ ǹ-dzə̀ tesi**
he-P2 P1 R-P1 R-leave yesterday
He <u>did</u> leave yesterday, after something else had happened.

b. **Ta -a li <u>e- sà'a</u> e- bi**
she-F F3 IR-F2 IR-give:birth
She will give birth on the following day.

c. **Tà-à <u>ŋ̀-gɨ́-à</u>⁸ ŋ̀-kɨ́' -â**
he-IMP R-P1-IMP R-come-IMP
He comes regularly/from time to time.

The sentences in (20) also show that these items, like lexical verbs, trigger the consecutivization of an immediately following verbal element, which must carry either a realis or an irrealis prefix. A further example of this property is seen in (21), where concessive **màà** causes the following main verb **gha** to appear in a consecutivized form **ŋgà**.[9]

(21) **Ba-a màà ŋ-gà a ntɔ', ko/m̀bə**
we-F CONC R-go LOC palace COND

bà ka ye a Fɔ̀ ziambɔŋ-a
we NEG see OBJ Fon himself
Even if we go to the palace, we shall not see the Fon himself.

7.1.2.2 Auxiliaries as Function Words

Despite the verbal properties of the items in (19), they are in diachronic terms well advanced along the road towards grammaticization.

Firstly, they are stripped of their lexical meaning (although where several verbal elements combine under complex TENSE, one of them may revert to its lexical sense: see the examples and comments in 6.5.2.2). Instead, they serve as function words encoding notions of tense, aspect or modality, or playing an adverbial role in relation to the main (lexical) verb (see **ŋgɨ̀à** in sentence (20c), which is interpreted as an adverbial *regularly, from time to time*).

Secondly, they comprise a small closed class of items, and the range of auxiliary forms available in a given clause is further constrained by the TAM marker appearing in initial position under TENSE. Thus in (22a) the P2 clitic -**à** in initial position means that the following tense auxiliaries must be past tense markers; future tense auxiliaries are ruled out (22b).

(22)a. **Tà-à ghɨ́ ǹ-dɔ̀' ǹ-dzà tesi**
he-P2 P1 R-P1 R-leave yesterday
He did come out yesterday, after something else had happened.

b. ***Tà-à ghɨ̃ ǹ-dɔ̀' ǹ-dzà tesi**
he-P2 F1 R-P1 R-leave yesterday

Finally, unlike lexical verbs, auxiliaries have no external (subject) argument, and cannot be followed by an NP complement or adverbial adjunct of any kind.

According to Steele (1981), the defining characteristics of the category AUX are the following:

(a) AUX marks tense and modality.
(b) The membership of the category AUX is fixed and small.
(c) AUX is a constituent.

Under this definition, the whole of Mundani TENSE qualifies for the label AUX, which, again following Steele, would have a fixed internal order of items. Here, however, it is preferred to restrict the AUX label to those TAM markers which exhibit at least some verb-like properties (as described above), in order to distinguish them from the clitic markers discussed in 7.1.1.

7.1.2.3 Negative Markers: a Subtype of Auxiliary

There are several similarities between negative markers and auxiliaries. Firstly, like auxiliaries, negative indicators carry stress, and have the status of independent words.

In addition, as seen in the list of NEG markers in section 3.3.2.1 (48), the basic nagative morpheme **ka** is inflected for tense, and in non-tense-marked clauses, for the perfective-imperfective aspectual opposition. Negative marking thus reinforces tense-aspect distinctions encoded in clitic and/or auxiliary forms. Furthermore, as with auxiliaries, the selection of a particular NEG form depends on the TAM specification appearing in the initial position under TENSE: so in (23a), the presence of the P2 clitic **-à** means that the P2 negative form **kà'à** is the only acceptable choice; a NEG marker inflected for any other tense is ruled out (23b).

(23)a. **Tà-à kà'à gh£ ñ-dɔ' ñ-dzə tesi**
he-P2 NEG:P2 P1 R-P1 R-leave yesterday
He did not come out yesterday, after something else had happened.

b. ***Tà-à ká'á gh£ ñ-dɔ' ñ-dzə tesi**
he-P2 NEG:P3 P1 R-P1 R-leave yesterday

A third resemblance between auxiliaries and negative markers is their verbal status. In biclausal sentences of the kind illustrated in (24), a negative indicator occupies the [Head,VP] position in the first clause (see 3.3.2.2 for details).

(24) [Tà-à [kà'à]] [tà ø kà ben]]
IP he-P2 VP NEG:P2 IP he T/A NEG dance
He did not dance (yesterday).

Such examples suggest that, like auxiliaries, negative markers are in some sense verbal even if there is no trace remaining in the language of a lexical verb from which they may be derived historically, and even if, in their present state, they have lost most of their verbal properties.

These observations lead on to the differences between NEG marking and the majority of auxiliary forms: namely, the absence of any corresponding lexical verb from which NEG markers can be seen to derive, and their failure to exhibit "verb-like" behaviour, such as the ability to acquire inflectional affixes, or to trigger the consecutivization of a following verb form. Compare, for example, (25a/b) with (25c). In the (25a) the P1 auxiliary lɔ̂' carries realis and imperfective affixes; appearing as ǹ-dɔ̀'ɔ̀ in the surface realization. In (25b), the same P1 auxiliary lɔ̂' triggers the consecutivization of the following auxiliary ghɨ̂, causing the latter to carry a realis prefix: ǹ-gɨ̀. In contrast, the negative indicator kà'à in (25c) is neither affixed itself, nor capable of triggering the consecutivization of the following auxiliary lɔ̂'.

(25)a. Tà-à ǹ-dɔ̀'-ɔ̀[8,10] ŋ̀-kɨ̀' -â
he-IMP R-P1 -IMP R-come-IMP
He comes regularly/from time to time.

b. Bɔ lɔ̂' ǹ-gɨ̀[8] ŋ̀-kɨ̀'ɨ̂
they P1 R-P1 R-come
Earlier today he did come.

c. Tà-à kà'à lɔ̂' ŋ̀-kɨ̀'ɨ̂
he-P2 NEG:P2 P1 R-come
He did not come yesterday, after something else had happened.

In conclusion, it appears that NEG markers may well derive from verbs; but their shift from lexical verb to function word is more complete than is the case with the main set

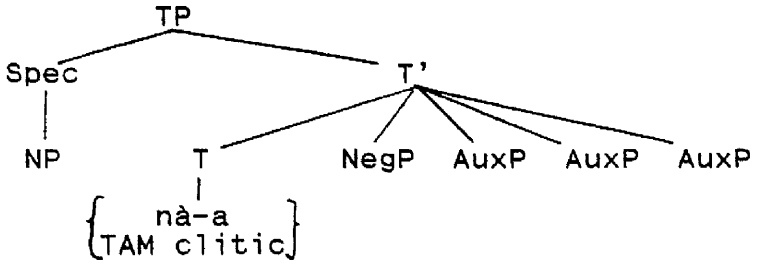
of TAM auxiliaries. In synchronic terms, we can regard NEG markers as a subtype of auxiliary, and we shall exploit this possibility in the next section, in considering the licensing of nodes under complex TENSE.

7.2 A Preliminary Syntactic Analysis of Elements under TENSE

The question arises as to the syntactic analysis of what has been referred to as complex TENSE.

One approach is to assume that what we have called "complex TENSE" (TP) consists of a specifier position (the equivalent of [Spec,IP] in more familiar terminology), occupied by the NP functioning as subject, a head T, filled by a TAM clitic or a progressive-imperfective form nà-a, followed by a series of complement phrases - NegP and up to three AuxPs - as sketched roughly in (26).[11] This kind of "flat", non-configurational structure is an assumption of, for example, Lexical Functional Grammar (Bresnan 1982; see also the discussion in Horrocks 1987).

(26)



However, in the analysis of double objects and dative shift in 3.1.2, we assumed Larson's formal version of X-bar theory known as the "Single Complement Hypothesis" (Larson 1988), which allows for only one specifier and one complement in each phrasal projection at D-structure:

(27) XP → Spec-X', X'
X' → X, YP

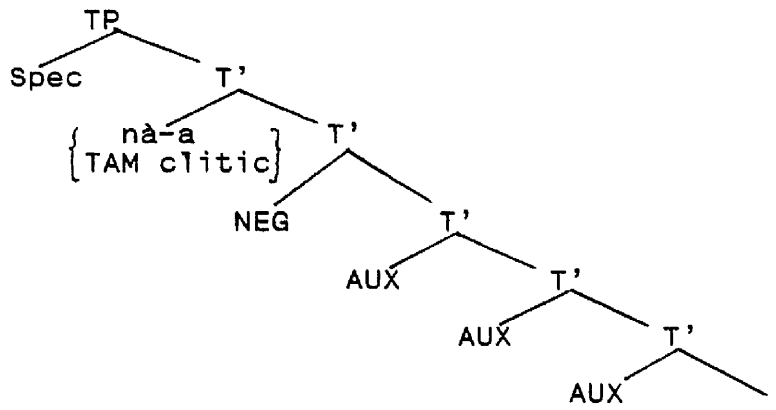
This formulation of X-bar structure would clearly need to be amended to (28) to account for the multiple complementation in (26):

(28) XP → Spec-X', X'
X' → X, YP*

(28) still does not allow for complementation by two different phrasal categories, NegP and AuxP, which would have to be collapsed into a single (AuxP) type, with the stipulation that the Lexical Conceptual Structure (LCS) of the initial AuxP in a series may optionally specify negativity. (As argued above, there are grounds for regarding NegP as a subtype of AuxP.) Larson's approach, then, has to be modified to account for structures such as (26); and even a modified version fails to capture adequately the interdependence of the different elements under TENSE.

Suppose instead "complex TENSE" has the structure in (29):

(29)



Larson's formal version of X-bar theory predicts only one node at each level; so iteration of the T-bar level would be disallowed. The first rule in (27/28) would have to be amended to accommodate more than one intermediate level:

(30) XP → Spec-X', X'*

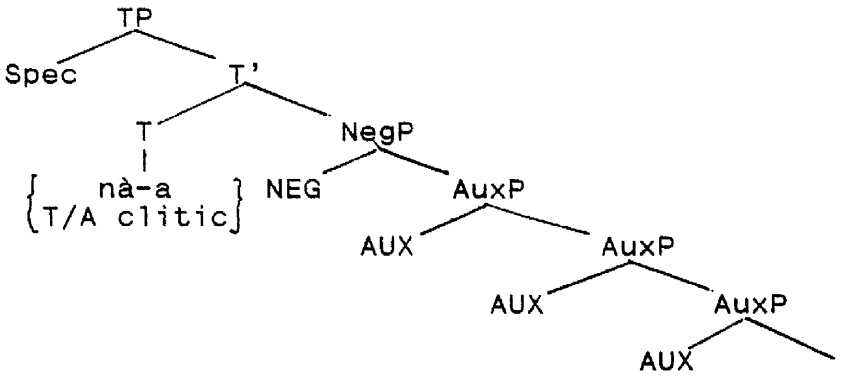
There is, however, a more serious difficulty with (29). We have already seen in 7.1.2.2 and 7.1.2.3 that the item (clitic or other) in initial position under "complex TENSE", determines crucially what NEG or AUX elements may follow it. It also determines whether a series of realis/irrealis or imperfective markers will appear on auxiliaries and the main verb (7.1.2.1). That is, its influence extends rightwards; or, put another way, NEG/AUX items show a leftward dependency. In (29), we are obliged to assume that the final element in the sequence under TP is the head T of the phrasal projection, and that any AUX or NEG elements or TAM clitics/particles higher up the structure are mere adjuncts. If this is the case, it is difficult to explain why the adjunct in the highest

position should play such an important role in the selection of the items that follow it: adjuncts are normally optional items, non-essentials in a given phrasal projection. Also, we are forced to say that the head T of TP may be an auxiliary (and, oddly, always the *last* auxiliary in a sequence), or a NEG marker, or a TAM clitic/particle, depending on the number and type of the elements combined under TP, and without regard to the importance of the item concerned in semantic terms. This claim seems intuitively improbable.

An alternative approach to (29) is to assume that the head T is itself a complex element composed of up to five sub-parts (an assumption that perhaps lies behind the label "complex TENSE"). However, in this case it would be necessary to stipulate the rightward influence of the initial component of the head and the leftward dependencies of subsequent components; these relationships would not follow from any independent principles of the grammar.

A more satisfactory result is obtained by assuming that what we have been calling "complex TENSE" in fact consists of a series of separate phrasal projections: TP, with its specifier and head positions, followed optionally by NegP and/or up to three AuxPs. The structure in (29) would then be relabelled as follows:

(31)



The interdependencies of these different phrasal projections and their compositional interpretation are explained in terms of theta discharge, which we shall now consider. The theory adopted follows Speas (1990).

Each word or morpheme has in addition to the lexical part of its meaning (the LCS or Lexical Conceptual Structure), a structural part to its meaning (a theta grid). Every

node is associated with a theta grid: theta grids of heads percolate into the phrase marker along with all other features of the phrasal head; theta grids of arguments are satisfied by virtue of their position in the structure, and therefore do not percolate upwards. Each place in a given theta grid must be discharged: the process of theta discharge takes place under the structural relation of sisterhood, and also enables nodes to be licensed - indeed, for a node to be licensed, it *must* enter into a thematic relation with its sister.

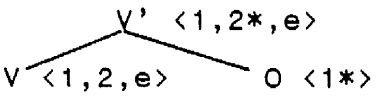
Speas identifies three different mechanisms for theta discharge, based on earlier work by Higginbotham (1985).

(a) Discharge (a confusing label, since all three mechanisms are concerned with the discharge of positions within theta grids)
(b) Merger (or Identification)
(c) Binding

These mechanisms are described briefly below. In the schemata, <e> symbolizes an event position; <1> and <2> represent argument positions; a starred position is one that is already satisfied.

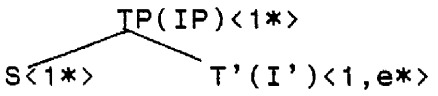
(a) Discharge Discharge occurs where one sister has a saturated theta grid and the other has at least one open position to be satisfied. The canonical case is that of a predicate and its complement, or V + O. The theta grid of the complement is saturated and does not percolate upwards; the grid of the head V percolates to the dominating node where the appropriate grid position is satisfied (32a).

(32)a.



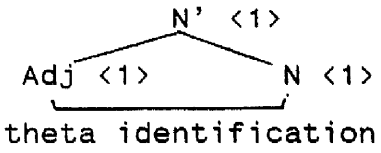
A discharge relation also exists between the T'(or I') node and a "subject" in the [Spec,TP] (or [Spec,IP]) position, as seen in (32b). Here the grid of the subject (S) is saturated; the T'(I') node has an empty position <1>, inherited from V lower down the structure, which is filled (satisfied) by the subject.

(32)b.

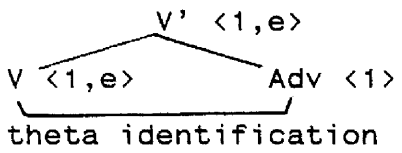


(b) Merger Merger is exemplified by the relationship between a modifier such as an adjective or adverb, and a modifiee such as a nominal or verb. In such cases, the position in the theta grid of the adjective or adverb is is discharged by being identified and merged with the empty position in the nominal or verbal element. The grid of the dominating node does not contain a starred position as in (32), since the two grid positions lower down have been merely identified and merged, leaving a grid position that must still be satisfied, and that is related to both sister constituents. The mechanism of theta identification is diagrammed in (33).

(33)a.

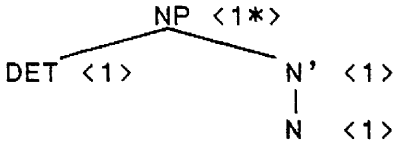


b.



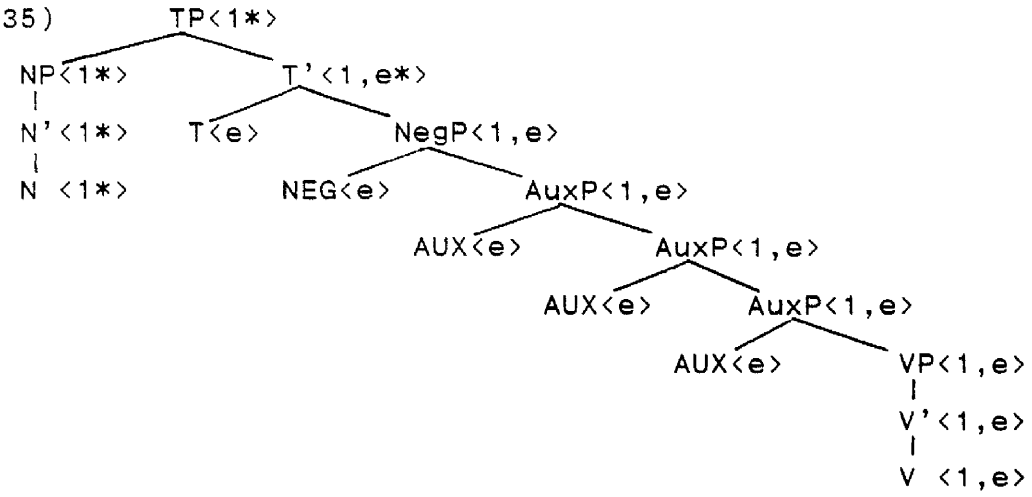
(c) Binding Whereas discharge and merger normally involve lexical items, theta binders are non-lexical heads. Such non-lexical heads have theta grids, but they differ from lexical items in the form of their LCS. Whereas the grid position of a lexical item such as a nominal will be linked in the LCS to a referential variable (x,y...), the grid position of a non-lexical item such as a determiner or quantifier will be linked with a property variable (p). (See note 12 for an example of the two different kinds of LCS.) Under theta binding, the "property" position of the non-lexical binder merges with the theta position of the lexical bindee, and this merged position is then satisfied: that is, it is prevented from being further discharged. So although this mechanism resembles merger, in that identification and merger of two grid positions occurs, it *differs* from merger in that all positions in the dominating node are fully satisfied (bound) and no longer available for discharge. The process is schematized in (34).

(34)



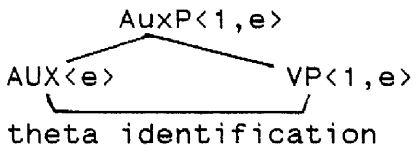
Returning to (31), we find that all three mechanisms for theta discharge are employed in order to license the different nodes under "complex TENSE". These processes of theta discharge are sketched out in (35).

(35)



Working from the bottom of the tree upwards, the grid of the head V (assumed to be an intransitive verb) contains one argument position <1> and an event position <e>, which percolate up to the dominating node VP. VP is the sister of AUX, which we take to have a theta grid containing an event position only <e>, and no argument positions (recall that AUX is recognizably verbal but has no subject or object). The event position of AUX undergoes identification and merger with the event position of VP, leaving an event position in the dominating node still to be satisfied.

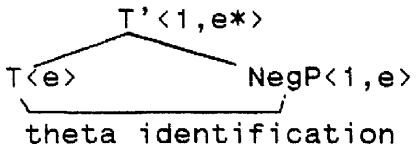
(36) Merger



This process of merger is applied to each AUX theta grid in turn, and to the grid of NEG where present. Note the assumption that NEG has an identical theta grid to AUX, comprising a single event position: that is, as already suggested, NEG is a sub-type of AUX, differing only by the presence of the notion of negativity within the LCS, and it undergoes an identical process of theta discharge. By repeated theta mergers, an event position is carried up the tree without being satisfied.

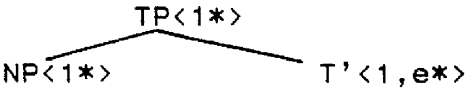
The highest AuxP node, or NegP, is reached. This node is the sister of T, whose theta grid again comprises a single event position <e>. Since T is a non-lexical head, however (in contrast to AUX which retains vestiges of its lexical origins), T acts as a binder with regard to its sister: that is, its event position is identified and merged with the event position in AuxP, and this merged position is then satisfied and unavailable for further discharge.

(37) Binding



Finally, T' is the sister of the NP in the external argument [Spec,TP] position. Here, the theta grid of the NP is saturated, and fills the empty argument position in the grid of T'. In other words, we have here an instantiation of the mechanism that Speas calls theta discharge.

(38) Discharge



An account of "complex TENSE" in terms of the discharge of positions within theta grids has several advantages.

First, it reflects the interdependence of the different phrasal constituents - TP, NegP and AuxP - and their compositional interpretation.

Secondly, the use of the merger discharge mechanism underlines the status of NEG and AUX heads as in some sense "modifiers" of the head V (compare (33) above).

Thirdly, the fact that a different discharge mechanism, that of binding, applies to the theta grid of the head T, highlights the status of T as a full-fledged function morpheme (see (34) above), in contrast to AUX and NEG, whose theta relations resemble those of lexical items. This distinction corresponds to our earlier observation that an item under T (whether **nà**-a or a TAM clitic) is completely stripped of lexical content, having the role of a purely grammatical marker, whereas AUX is not yet totally grammaticized.

Finally, an analysis in terms of theta relations enables us to account, at least partially, for the linear arrangement of elements within a structure such as (35). For example, the merger relation between AUX and its sister leaves an empty (undischarged) <e> position in the dominating node AuxP. This means that another, higher AUX projection is possible in principle, since the <e> position of the lower AuxP node is available for merger with the <e> position of a sister AUX. In other words, iteration of the AUX projection is permitted under this account. As soon as a projection of the head T intervenes, however, the <e> grid position that has been "passed up" the AUX sequence by merger is satisfied, and no longer available for discharge. This means that higher level AUX projections are ruled out, since the <e> position of such an AUX would have no sister <e> position with which it could merge: that is, no mechanism for discharge available to it. The analysis thus provides a principled explanation for the iteration of AUX projections, and for the fact that the non-lexical head T precedes AUX(es) in the linear sequence of elements.

7.3 The Relationships between Tense, Aspect and Modal Marking

Up to this point, we have assumed that everything under finite INFL - that is, what we have been referring to as complex TENSE - can be grouped together for the purposes of analysis. Where distinctions have been made eg. between clitics and auxiliaries, they are based on the morphosyntactic properties of the items concerned, and not on semantic concepts such as tense, aspect or modality. In this section we shall examine briefly the case for grouping together the elements used to encode these different concepts, and also the arguments in favour of positing a separate (discontinuous) constituent encoding aspectual notions.

7.3.1 The Case for a Unitary Approach to TAM elements

One reason for a unitary approach to tense, aspect and modality in finite clauses is the difficulty of separating them out physically, both in terms of their morphology and their relative positions in syntactic configurations. For example, the set of clitics that may occupy the head position T includes tense markers (P3, P2/P, F), and the imperfective aspect marker -a, which contrasts with zero

marking in perfective forms. The (non-clitic) aspect markers **nà** and **mé-** are also base-generated under T; likewise the low tone signalling the obligational modal category. Auxiliary forms include markers of tense (P1, F1, F2, F3), forms that combine tense with aspect (the past and future imperfective), and modal indicators (concessive, counterfactual). In combination with other tense markers, some tense auxiliaries undergo semantic shifts to express modal concepts such as "definite, counter-assertive" (see 6.5.2.2 and 6.5.2.3 for examples). To complicate the picture further, auxiliaries (and the following main verb) may carry realis/irrealis (R/IR) modal marking and/or an imperfective aspectual suffix. Imperfective marking is discussed in section 7.4 below; R/IR prefixes are presented briefly here, but are described more fully in chapters 8 and 9.

R/IR modal prefixes appear on non-initial verbal items in sequences of lexical verbs: namely in serial and consecutivized verb constructions. Auxiliaries are derived from lexical verbs, and in the process of grammaticization as markers of TAM categories, they retain the pattern of R/IR modal marking on non-initial auxiliaries in a series and also on the following main verb.

Examples of realis and irrealis marking in auxiliary series are seen in (39a) and (39b) respectively, which repeat examples (71a) and (72a) in chapter 6.

(39)a. Realis

Tà-lè li n̄-dɔ̀' n̄-dzə̀
he-P3 P1 R-P1 R-leave
He left yesterday (-lè), early in the morning (li), after something else had happened (ǹdɔ̀').

b. Irrealis

Ta-a ghɨ̄ e̲ -lɔ̀'ɔ e̲ -sà'a e̲ -dzə̄
he-F F1 IR-F1 IR-F2 IR-leave
He will (ghɨ̄) leave tomorrow (esà'a), after something else has happened (elɔ̀'ɔ).

In such series, the choice of realis or irrealis marking is determined by the TAM specification under T; and, not surprisingly in semantic terms, there is a general correlation of realis marking with past and "present" tenses, and of irrealis marking with future tenses (although this is not invariable: see (21) above). In

other words, although R/IR prefixes in an auxiliary sequence may make an occasional contribution to modal distinctions, their main function is to reinforce the opposition between future and non-future tenses. Syntactically, they are taken to be incorporated into the head AUX (we shall return to this question, briefly, in 9.4.1).

The fact that the notions of tense, aspect and modality are not realized as discrete entities, but are morphologically and syntactically intertwined, seems to favour the approach adopted up to this point: namely, an analysis based on a morphosyntactic classification of markers as clitics, auxiliaries, etc., rather than on the semantic concepts that they encode. This means grouping markers of tense, aspect and modality together in a structure such as (31), without singling out any one concept above the other two.

7.3.2 The Case for a Separate Aspectual Constituent

Consider, however, the distribution of aspectual marking in relation to tense and modality.

Tense and modal indicators are distributed across all positions under finite INFL (complex TENSE): they may appear under the head T ie. to the left of NEG, and also in the auxiliary series to the right of NEG. The negative marker itself is also inflected for tense (3.3.2.1).

Aspectual indicators, on the other hand, are generally confined to the head position T, to the left of NEG. Auxiliaries do not encode aspectual notions, with the exception of past and future tense imperfective forms, where the auxiliary **wua** combines aspectual meaning with tense. The negative marker may be inflected for the perfective-imperfective aspectual distinction, but only in the absence of overt tense marking.

The possible distributions of tense and modal indicators on the one hand, and of aspectual indicators on the other, are charted in linear fashion in (40). A plus sign indicates that tense/modality or aspect can be encoded in the given form; a minus sign shows that it cannot; the symbol ± indicates that the NEG element will encode aspect only if tense marking is absent.

(40)

	T	NEG	AUX	AUX	AUX
Tense Modality	+	+	+	+	+
Aspect	+	±	-	-	-

The more restricted distribution of aspectual marking prompts us to consider the possibility of positing a separate aspectual phrasal constituent in the analysis.

(40) does not take into account imperfective aspectual suffixes, however. In non-future-tense clauses marked for imperfectivity, additional imperfective marking in the form of the suffix -a appears on auxiliaries and on the following main verb. Examples are seen in (41a/b); (41c) illustrates the absence of verb suffixes in imperfective future tense clauses. Note also that when a "present" tense imperfective contains a NEG marker, imperfective suffixes are again absent (41d).

(41)a. Imperfective "Present"

Tà-à ŋ̀-gɨ̀-à ŋ̀-kɨ̀' -á
he-IMP R-P1-IMP R-come-IMP
He comes regularly/from time to time.

b. Imperfective Past

Tà-lè wua ǹ-dɔ̀'-ɔ́[10] ŋ̀-kɨ̀ -á
he-P3 IMP:P R-P1 -IMP R-come-IMP
He was coming before yesterday (-lè), before something else happened (ǹdɔ̀'ɔ́).

c. Imperfective Future

Tà ná -á wua kɨ̀'ɨ́
he PROG-IMP?/F? IMP come
He will be coming.

***Tà ná-á wua kɨ̀'a**

d. Imperfective "Present" - Negative

Tà-à kà ben
he-IMP NEG:IMP dance
He is not dancing.

***Tà-à kà m̀-bèn-á**

Since the progessive aspect marker **nà** is accompanied obligatorily by imperfective **-a** (6.1.2.2), strings of imperfective suffixes will occur also in (non-future) progressive clauses:

e. Progressive "Present"

Tà nà -à ŋ̀-gɨ̀-à ǹ-tsèk-â abot
he PROG-IMP R-P1-IMP R-stay-IMP there
He stays there regularly/from time to time.

At first sight, the iteration of imperfective marking across finite INFL seems to run counter to the pattern of distribution charted in (40), and so undermine the case for analysing aspect separately from tense and modality. If, however, we regard the basic imperfective marker to be either the clitic **-a** (in the "present" tense), or the tense-aspect auxiliary **wua** (in past tenses), and suffixes on subsequent verbal forms to be merely some kind of agreement marking, then the distribution charted in (40) remains more or less correct. Indeed, the fact that imperfective (or progressive-imperfective) marking is accompanied by a set of agreement suffixes forming an "overlay" to the remaining contents of finite INFL, seems to set aspectual marking apart from tense and modal marking, and might be considered an additional reason for handling aspect separately in the syntax. On the other hand, one could argue that R/IR prefixes are (in the process of becoming) agreement markers in relation to the tense specification of the clause, and that they also form an "overlay" system; so the evidence for the "separateness" of aspectual marking remains inconclusive.

By positing a separate, discontinuous Aspect Phrase (AsP), then, it may be possible to reflect to some degree the different distributional and agreement properties of aspectual marking. However, we choose to handle all TAM marking in finite clauses in a unitary fashion, for the sake of simplicity, and because the evidence in favour of a separate AsP constituent is not wholly convincing.

7.4 The Problem of Imperfective Marking

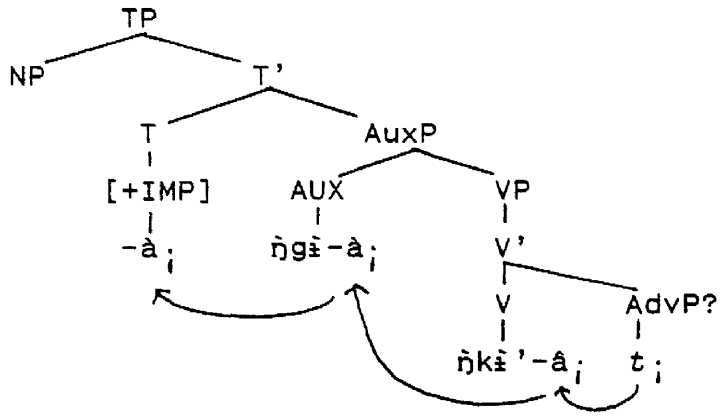
7.4.1 Towards an Analysis of Imperfective Marking

Under both TP and AsP approaches, there are difficulties in accounting satisfactorily for the "spread" of imperfective marking across finite INFL.

Suppose that the suffix -a is base-generated as the head of some kind of adverbial phrase in a V' adjunct position, to the right of V. Suppose also that it needs to move up the structure in order to license the feature [+IMP] under

TENSE; and as it moves up, it is "checked" against each maximal projection. The process is diagrammed in (42), using sentence (41a) as an example.

(42)



The movement of the "adverbial" **-a** to V in (42) is a straightforward case of head-to-head movement that respects the constraints of such processes: that is, the Empty Category Principle (ECP) and Minimality. The trace of -a is properly governed by its antecedent, as required by the ECP; the antecedent is the *closest* potential governor of the trace, so the Minimality Condition is also respected. This stage of the movement process thus corresponds to the pattern of movement that, according to Baker (1988) is a prerequisite for the incorporation of one head element in another. However, the incorporation of -a into V should in theory block its further upward movement; likewise its incorporation into AUX should prevent it from moving up to T. How is it that it is able to move out of these positions, leaving a copy of itself behind, and continue to "spread" upwards? This approach also fails to explain why, in future tenses and in negative "present" tense clauses, imperfective marking occurs in preverbal position only, and imperfective suffixes are absent altogether.

7.4.2 A Comparison of Imperfective, Hypothetical and General Future Marking

In this section, we compare the imperfective indicator -a, the hypothetical modal marker -á, and the marker of the general future tense -á. The three markers are segmentally (but not tonally) identical; they are semantically rather similar in that they refer to events that are not complete or (fully) realized; all three may

turn up in postverbal position (in fact, the hypothetical marker appears only in this position).

7.4.2.1 The Imperfective Suffix

The beginnings of a syntactic analysis of imperfective markers were sketched out in the preceding section. It is sufficient here to add that the imperfective verb suffix has two properties: (i) it is inseparable from the verb or auxiliary to which it attaches itself; (ii) its tone is determined by the overall tone pattern of the verb stem: that is, it does not retain its underlying tone at PF.[13]

We shall now focus on hypothetical and general future marking.

7.4.2.2 The Hypothetical Suffix

The hypothetical suffix **-á** is illustrated in (35b), section 6.2.2.1, repeated here as (43).

(43) **Tà kɨ́' -á̱ apfə̀ am ko/m̃bə àghɨ̀ akɔ̃**
he come-HYP LOC:compound my COND thing INDEF

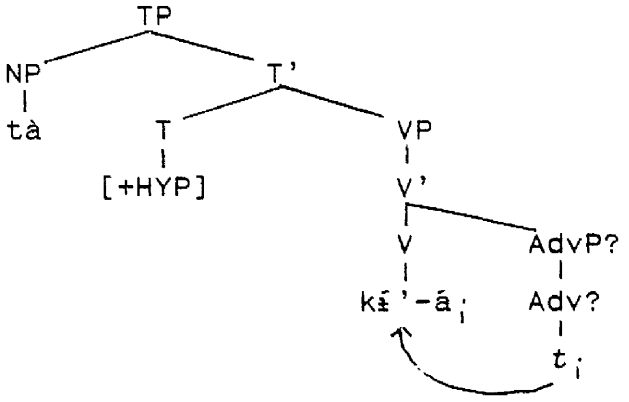
mâ ø ŋa atò la a ñtsè
I PF give him SUB it be:not
If he came to my compound,
I would not give him anything.

Note that the hypothetical marker differs from the imperfective inflectional suffix in several ways: it has no corresponding marker(s) in preverbal position; it is suffixed to the bare (unaffixed) root of V, as opposed to a verb stem; it has an inherent high tone that remains unaffected by the tone (high or low) of the verb root.

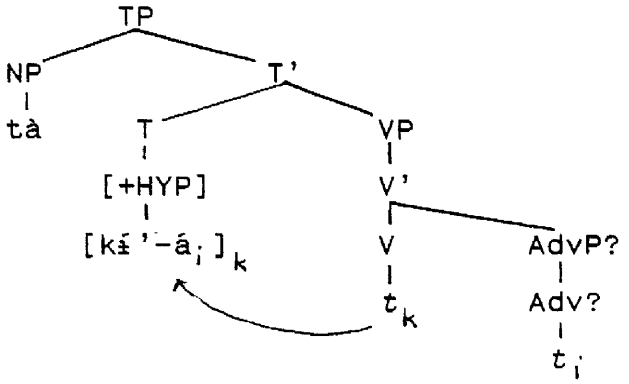
Suppose nevertheless that the hypothetical marker resembles the imperfective suffix in that it is base-generated under some kind of adverbial phrasal projection to the right of V, and needs to move upwards in order to license the feature [+HYP] under T. In the first stage of this process, the "adverbial" -á raises to V and is incorporated into the verb. In the second stage of the process, the verb *along with* its incorporated hypothetical morpheme, moves up to T where the feature [+HYP] is licensed. Note that this account depends crucially on the absence of intervening AUX or NEG projections, and in fact no cases are found in the data where hypothetical marking

co-occurs with auxiliaries or negation. The two-stage mechanism is diagrammed in (44a/b).

(44)a. Stage 1



b. Stage 2



7.4.2.3 The General Future Marker

It is worth comparing both imperfective and hypothetical forms with the general future marker -á that appears in postverbal position in negative clauses (see 3.3.2.2). Postverbally, this future marker is not necessarily attached to V, but to whatever item occurs in VP-final position; but, like the hypothetical marker, it retains its inherent high tone regardless of the tone pattern of its host.

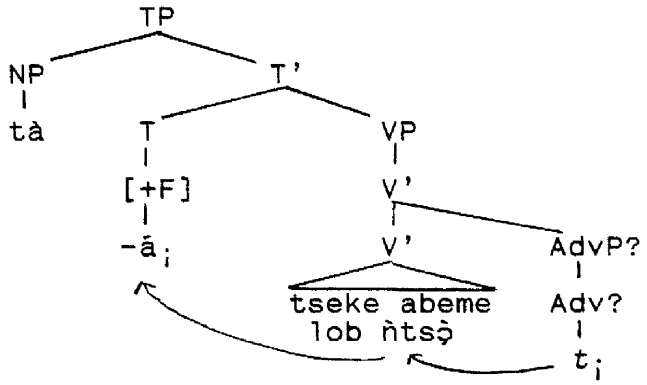
(45)a. **Tà ka [tseke [abeme [lob kàbɔ̀ŋ-á]]]**
he NEG:F VP stay PP inside NP house bad -F
He will not stay in a bad house.

In non-negative future tense clauses, the general future indicator appears in preverbal position only:

(45)b. **Ta-a tseke wu abeme lob ñtsɔ̰**
he-F stay only inside house good
He will stay only in a good house.

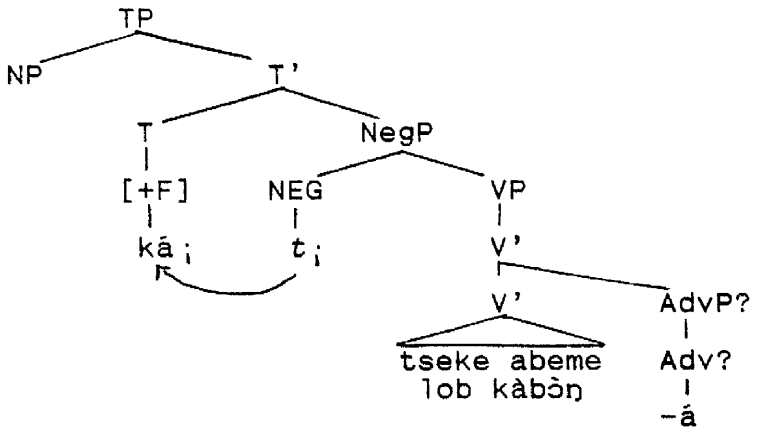
We assume a D-structure similar to that posited for imperfective and hypothetical constructions, where the future marker -á is situated to the right of V. In non-negative clauses, the future marker must raise to T to license the feature [+F], as seen in (46a). Note that the "adverbial" is "checked out" against VP as it moves upwards; but instead of being incorporated into V, as in imperfective and hypothetical clauses, it is free to continue moving up to the head T. Here it licenses the feature [+F] and also antecedent governs and so licenses its trace.

(46)a. Future Tense - Positive



Where the negative future marker **ká** is present, however, it is the most local available licenser for the feature [+F]. It therefore moves up to T by head movement, leaving the "adverbial" morpheme -á in its D-structure position.

(46)b. Future Tense - Negative



(46b) leaves some unanswered questions. For example, we must assume that the NEG morpheme is a suitable licenser for the tense feature under T. If this is the case, we would expect the imperfective negative marker kà to be suitable licenser for the feature [+IMP], also, resulting in a similar pattern of marking in negative imperfective clauses; but the facts do not bear this out. In past negative imperfective clauses, imperfectivity is marked overtly in both preverbal and postverbal positions; in the "present" negative imperfective we find exactly the opposite situation from that diagrammed in (46b), with overt imperfective marking under T, while postverbal imperfective marking is absent altogether (41d). (We have no data for negative future imperfectives.)

Clearly more work needs to be done on the syntactic analyses of imperfective, hypothetical and general future morphemes; but there are interesting parallels between the three markers that suggest that it may be possible to arrive at a unitary account.

7.5 Summary

In this chapter we have examined the morphosyntactic properties of elements under what has been termed the TENSE component of INFL, and have attempted to describe the internal structure of "complex TENSE". It turns out that the latter is not in fact a single functional category, but a collection of different kinds of functional category (TENSE, AUX, and NEG analysed as a subtype of AUX), each of which heads its own phrasal projection. There is insufficient evidence to posit a separate aspectual category (ASPECT).

The syntactic structure of "complex TENSE" is accounted for in terms of the discharge of positions within theta grids. This analysis leaves unresolved, however, the question of the "spread" of imperfective agreement suffixes across auxiliary sequences. The tentative approach to this problem outlined in 7.4 is not entirely satisfactory, either on empirical or on theoretical grounds; and it is in any case difficult to harmonize with an overall analysis in terms of theta theory. It will be interesting in the future to investigate recent "Minimalist" notions of movement operations, to see if they can shed light on the complexities of the Mundani data.

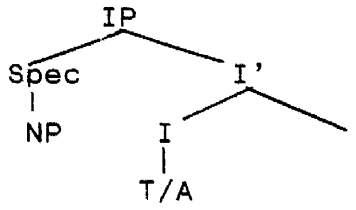
CHAPTER 8 - THE CATEGORY AGR: CONTENT AND DISTRIBUTION

8.0 Introduction

In chapters 6 and 7, the content and syntactic properties of finite INFL (TENSE) were examined. We turn now to non-finite INFL (AGR).

Recall first the contrast between finite and non-finite INFL constituents sketched out in chapter 5. Finite INFL is schematized as follows (see 5.1, example (1)):

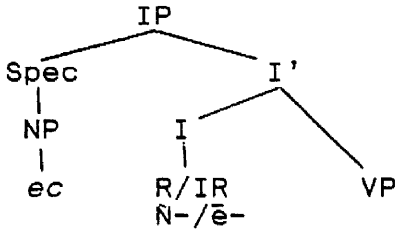
(1)



The Spec position in (1) is occupied by the NP functioning as subject; the phrasal head I is filled by a Tense-Aspect (or occasionally a modality) marker (T/A), which may or may not have overt phonetic content, and which may be simple or complex. The presence of an overt subject plus T/A marking leads us to assign the feature [+TENSE] to finite I; and since there is no overt evidence of agreement marking, we assume the feature [-AGR]. Finite INFL appears in all main and most subordinate clause types.

Non-finite INFL, on the other hand, is confined to a particular type of embedded clause, defined by the absence of an overt subject, by the lack of any preverbal T/A markers, and by the presence of a realis or irrealis (R/IR) modal prefix on the verb itself. This clause-type is schematized provisionally in (2), where <u>ec</u> represents an empty category, and R/IR marking occupies the head I.

(2)



Since there is never any tense-marking in non-finite I, we assume the feature [-TENSE]; and in chapter 9 we argue for the feature [+AGR] deriving from the anaphoric, "same-subject" functions of the R/IR prefix.

Finite and non-finite INFL, then, are in complementary distribution and have discrete content and distinct feature specifications. As already pointed out in chapter 5, these distinct identities present a strong case for regarding the two as separate syntactic categories - TENSE and AGR - with the maximal projections TP and AgrP respectively. We return to this point in chapter 9.

This chapter is largely descriptive, presenting first the R/IR morphology that comprises the content of AGR, and the three different types of verbal sequence in which R/IR marking occurs. We then focus on one of these sequence types, the consecutive construction (CC), where R/IR marking in AGR has a threefold function: to encode modal categories; as a system of "same-subject" marking; and as a means of signalling a particular syntactic relationship between consecutivized constituents.

In chapter 9, we present and compare two possible syntactic analyses of the data: the first in terms of Switch Reference marking, and the second in terms of Control Theory.

8.1 Realis/Irrealis Morphology

R/IR morphemes are prefixes attached to the verb stem. The realis prefix is a nasal consonant homorganic with the initial consonant of the verb root: **ǹ-kɨ́'ɨ́**, *R-come*. The nasal prefix has a variant **è-** carrying low tone (but sometimes with a null phonetic realization), that precedes root-initial nasal and voiceless fricative consonants: **è-nu**, *R-drink*; **è-fà'à**, *R-work*; **è-su**, *R-say*. The irrealis prefix is the vowel **ē-** carrying mid tone: **ē-kɨ́'ɨ́**, *IR-come*.

8.2 Sequences of Verbal Elements

With one exception (mentioned in 8.4.2), R/IR morphology occurs only on non-initial verbs in a verb sequence. By a "verb sequence" we mean either a series of main (lexical) verbs sharing a common subject, or a sequence of auxiliary verbs that precede a main verb and that encode tense-aspect-modal (TAM) categories.

We shall give a brief "map" of the different kinds of verbal sequence before examining the consecutive verb sequence in detail.

8.2.1 The Consecutive Construction (CC)

Two or more verbs sharing a common subject may appear in sequence, to express the semantic coordination of two or more events that frequently (but not necessarily) follow each other in time. The subject is expressed overtly only before the initial verb in the series. As noted above, non-initial verbs in the sequence will carry an R/IR prefix. Such verb sequences can be composed of as many as eight to ten verbs: in theory there is no limit to the number. The nature of the syntactic relationships between the verbs in the series will be discussed in later sections. For the moment it is sufficient to note that these relationships are relatively "loose": for example, object NPs or adverbials may be inserted freely in the series, and each verb receives an independent interpretation.

The CC in Mundani corresponds to what Bamgbose (1974) terms a "coordinated series". An example is seen in (3).

(3) **Bɔ̀ -lè kɨ'ɨ̀ ǹ- tsèkê ǹ- dzɨ́**
they-P3 come R/SS-sit R/SS-eat

èghɨ́dzɨ́ è- nu melù'
food R/SS-drink wine
They came, sat down, ate food and drank wine.

8.2.2 The Serial Verb Construction (SVC)

The SVC is formally identical to the CC in that it comprises a series of verbs sharing a common subject; the subject is expressed overtly only before the initial verb in the series; and a non-initial verb will assume the "consecutivized" form carrying R/IR morphology.

In other respects, however, the SVC has markedly different characteristics from the CC. For example, it consists typically of two verbs only, very closely bound together both in syntactic and semantic terms: that is, re-ordering of the two verbs is prohibited, VP expansion by the insertion of adverbials (and often also of object NPs) is strictly constrained, and the two verbs are interpreted either compositionally, as a unit, or as Main Verb + Modifying Verb. These characteristics are to be contrasted with those of the CC described in section 8.4.

Referring again to Bamgbose's terminology, we can subdivide SVCs into "complex" and "modificatory" types. These are illustrated in (4) and (5).

(i) Complex Series

The two verbs together yield a single idiomatic meaning:

(4)a. **Tà ø nu meleb m̀- pfə**
he PF drink water R/SS-die
He has drowned [1]
(Lit: *He has drunk water and died.*)

b. **Tà-lè nɨŋ ŋkɔ̀' yu ǹ- kɨ'ɨ̂**
he-P3 take chicken DEF R/SS-come
He brought the chicken.

c. **Tà-lè nɨŋ ŋkɔ̀' yu ǹ- gà awen**
he-P3 take chicken DEF R/SS-go LOC:market
He took the chicken to market.

(ii) Modificatory Series

One verb in the pair modifies the other, adding to it an adverbial or comparative sense. The modifying verbs are underlined in (5).

(5)a. **Bɔ -ɔ̀ ǹ-[2] tsèk-â ǹ- kɨ' -â**
they-IMP R/SS-stay-IMP R/SS-come-IMP
They are always coming/They come regularly.

b. **Tà ø kô ànə yu ǹ- tsè am**
he PF know matter DEF R/SS-surpass me
He knows more than me about the matter.

Note that an SVC may be contained within a Consecutive Construction, as in (6):

(6) **Tà ø dzə̀ àbę nɨŋ ŋkɔ̀' yu ǹ- gà**
he PF go:out outside take chicken DEF R/SS-go

awen, è- fɨ̀ɨ̀nè
LOC:market R/SS-sell
He went outside, took the chicken to market and sold (it).

8.2.3 Sequences of Auxiliary Verbs

Up to three auxiliary verbs may appear in sequence preceding a main verb. Each of these auxiliaries has a basic function as a tense-aspect marker; but in combination they undergo complex semantic shifts to signal relative time reference (anteriority or posteriority), or

various aspectuo-modal categories. These auxiliary forms fall under the finite (TENSE) component of INFL (see chapters 6 and 7).

Consider first the major tense auxiliaries listed in section 6.5, table (43). The listing is as follows:

(7)	P1	**ghɨ́**	from **eghɨ̃**	*to do/make*
		lɔ̀'	from **elɔ̀'ɔ**	*to move/leave*
		li	from **eli**	*to sleep/pass the night*
	F1	**ghɨ̃**	from **eghɨ̃**	*to do/make*
		lɔ̀'ɔ	from **elɔ̀'ɔ**	*to move/leave*
	F2	**sà'a**	from **esà'a**	*to wake up*
	F3	**li**	from **eli**	*to sleep/pass the night*
	NARR	**li**	from **eli**	*to sleep/pass the night*

As seen in (7), each of these tense auxiliaries is derived from an independent lexical verb; and corresponding to the precise form of each auxiliary is an identical form that functions as a full-fledged lexical verb in other contexts. In other words, although these auxiliaries are function words in the sense that they encode grammatical categories and are stripped of lexical content, they retain the *form* of lexical verbs, exactly as in consecutive and serial constructions: they carry independent stress, they pattern in the same way tonally, and they have the same possibilities of affixation, including R/IR morphology, as independent verbs.

An example of an auxiliary sequence is seen in (8), where the relevant items are underlined. Each has a basic function as a future tense marker. Non-initial auxiliaries in the series carry IR marking, as does the main verb **eghã**.

(8) **Ta-a** <u>**ghɨ̃**</u> <u>**e- lɔ̀'ɔ**</u> <u>**e- sà'a**</u> **e- ghã abot**
he-F F1 IR-F1 IR-F2 IR-go there

He <u>will</u> go there tomorrow, after something else has occurred.
(**eghɨ̃** =*to do*; **elɔ̀'ɔ** =*to move*; **esà'a** =*to wake up*)

Note that it is possible for one or more auxiliary verb(s) to precede the initial verb of a consecutive or serial construction, to help establish the TAM specification for the construction as a whole.

For the moment our discussion will concentrate on the Consecutive Construction (CC).

8.3 The Subject Position

In the CC, only one logical subject is overtly present in the syntax, preceding the initial verb in the series, despite the fact that each verb in the sequence presumably has an external argument. The different subject positions are coindexed (that is, coreferential).

8.3.1 Subjects and R/IR Marking

In (9) a CC is seen alongside its non-consecutivized counterpart.

(9)a. Non-consecutive Construction

Tà ø pàà atò, tà ø kpen asi
he PF push him he PF fall LOC:ground
He$_i$ pushed him$_k$, he$_{k/j}$ fell down.

b. Consecutive Construction - realis

Tà ø pàà atò ŋ̀- kpen asi
he PF push him R/SS-fall LOC:ground
He$_i$ pushed him$_k$ and fell down.

c. Consecutive Construction - irrealis

Ta-a pàa atò ē- kpene asi
he-F push him IR/SS-fall LOC:ground
He$_i$ will push him$_k$ and fall down.

(9a) consists of two clauses juxtaposed without any overt marker of the relationship between them. The second subject pronoun **tà** must be non-coreferential with the first. (9b/c) are the consecutivized constructions that correspond to (9a). Here the second subject pronoun is replaced by the realis prefix ŋ̀- or the irrealis prefix ē-, indicating that the subject of the second verb is obligatorily coreferent with the subject of the first. An R/IR prefix, then, signals that the implicit subject of the verb so marked is coreferential with the (overt) subject of the immediately preceding verb in the sequence.

This subject-marking function of the R/IR morpheme, and the contrast between (9a) and (9b/c), suggest that the R/IR marker is a type of subject pronoun. This impression is reinforced by its shape (Ñ-/ē-), which resembles closely the "reduced" forms of the first person singular subject pronoun Ñ-/é- (see Parker 1986). Notice, however, that the reduced first person pronouns are stress-bearing, whereas the R/IR marker is phonologically bound to the

verb. Also, unlike the regular subject pronoun series, the R/IR marker lacks features of person, number and gender (it signals "same-subject" regardless of the person/number/gender of the referents involved).

In these respects R/IR marking differs also from the logophoric form used to signal "same-subject" in reportive contexts: that is, in the complement clause following a verb of speaking, thinking, knowing, feeling etc., introduced by the complementizer **nê** *that* or **ǹdɨ** *how*. In (10a/b) the third person singular logophoric subject form **ye** signals that the subject of the complement clause is obligatorily coreferential with the subject of the matrix clause.

(10)a. **Wạ wu ø su abua tɔ̀ nê, yè -lè ka'a kô**
child DEF PF tell to him that LOG-P3 NEG know
The child$_i$ told him$_k$ that he$_{i/*k*j}$ didn't know.

b. **Tà ø kô ǹdɨ yè- a ghɨ̃ la**
he PF know how LOG-F do SUB
He$_i$ knows how (=what) he$_{i/*k}$ will do.

In (10), **ye** could be replaced by the normal third person singular subject pronoun **tà**, in which case the subjects of the two clauses would be necessarily non-coreferential:

(11) **Tà ø kô ǹdɨ tà- a ghɨ̃ la**
He$_i$ knows what he$_{k/*i}$ will do.

In **nê/ǹdɨ** complement clauses, non-third-person singular "same-subjects" are encoded by subject pronouns from the usual sets; so in these cases there is no formal distinction between "same-subject" (SS) and "different-subject" (DS):

(12) **Bɔ ø kô ǹdɨ bɔ̀-ɔ ghɨ̃ la**
They$_i$ know what they$_{i/k}$ will do.

In (10) and (12), although **ye** indicates SS obligatorily and **bɔ** does so optionally, neither subject pronoun may be replaced by R/IR "same-subject" marking, since this would result in the separation of the R/IR morpheme from the verb on which it depends:

(13) ****Tà/Bɔ ø kô ǹdɨ ē- a ghɨ̃ la**
he/they PF know how IR/SS-F do SUB
He$_i$ knows what he$_i$ will do/
They$_i$ know what they$_i$ will do.

Logophoric **ye**, then, differs from the R/IR marker in that it is not phonologically bound to the verb, and has person-number features. In these respects it is like a regular subject pronoun. The common characteristic of **ye** and R/IR prefixes is that both signal the obligatory coreferentiality of the subject of a complement clause with the subject of the immediately preceding (matrix) clause; only R/IR marking correlates with consecutivized complement clauses, while logophoric **ye** correlates with complement clauses of the **nê/ǹdɨ** type.

The set of SS markers and their correlation with the different types of complement clause are summarized in (14).

(14)

	Consecutive Compl.	**nê/ǹdɨ** Compl.
SS marking	- realis prefix Ñ- - irrealis prefix ē-	-3pSG logophoric **ye** -All other persons: "normal" subj. pronouns (ambiguous as to SS/DS reference)

R/IR morphemes, then, have a subject role in the CC. In addition, realis and irrealis forms participate in a system of modal distinctions in the language. The realis and irrealis modal categories are illustrated in (15a/b). The various factors determining the choice between the two are not discussed here; but the basic contrast between an action/event that has been realized, and one that has not, means that realis morphology frequently appears in Past Tenses as in (15a), and irrealis morphology in Future Tenses as in (15b).

(15)a. Realis

Tà -à nɨŋ medzù' mi ǹ- dą̄ ǹ- dzɨ
she-P2 take yams her:REF R/SS-cook R/SS-eat
She took her yams, cooked and ate them (yesterday).

b. Irrealis

Ta -a nɨ medzù' mi ē- lą́ą́ ē- dzɨ
she-F take yams her:REF IR/SS-cook IR/SS-eat
She will take her yams, cook and eat them.

The fusion of a subject marker with R/IR modal marking is not an isolated phenomenon. Parallel systems occur in other Grassfields Bantu languages eg. Mankon (Jacqueline Leroy, p.c.). The phenomenon is also found in certain Austronesian languages of Papua New Guinea. In Arop-Sissano, for example, there are three distinct sets of subject prefixes corresponding to realis, irrealis and habitual modes (Bugenhagen 1991:13). Unlike the R/IR prefixes in Grassfields languages, however, the Sissano prefixes do not mark "same-subject", and *do* encode person-number features.

8.3.2 Subjects and the prefix *mé-*

The R/IR prefix is sometimes replaced by the high-tone prefix **mé-** signalling the incompletive aspect. It is probable that this form is derived from the auxiliary verb **emèe** that expresses repeated action, *to do again/several times* (see 6.1.2.3).

In the context of a CC, the prefix **mé-** implies that the situation expressed by the affixed verb is "in progress but incomplete". In so far as such situations are only partially realized, **mé-** could be said to encode a notion that is conceptually somewhere in between realis and irrealis, but is distinct from both.

Examples of "incompletive" **mé-** in the CC are seen in (16) and (17), where **mé-** appears in the context of realis and irrealis marking respectively.

(16)a. Realis

Bɔ ø ghà akatè ŋ̀- kua
they PF go LOC:school R/SS-return

ŋ̀- kɨ̀'ɨ̂ alʊ̰ ǹ- dzè èlə' ǹdʊ̰
R/SS-come LOC:path R/SS-see hole (of) giant:rat

They went to school and returned, and came along the path, and saw the hole of a giant rat.

b. Realis-Incompletive

Bɔ ø ghà akatè mé-kua ŋ̀-kɨ̀'ɨ̂ alʊ̰ ǹ-dzè èlə' ǹdʊ̰
They went to school, and as they were returning along the path they saw the hole of a giant rat.

(17)a. Irrealis

Bɔ -ɔ ghã akatè ē- kua
they-F go LOC:school IR/SS-return

afɨ' -a nyèmbà'a
LOC:time-AM afternoon
They will go to school and/to return in the afternoon.

b. Irrealis-Incompletive

Bɔ-ɔ ghã akatè mé-kua afɨ'a nyèmbà'a
They will go to school and will be returning in the afternoon.

When incompletive **mé-** appears in a CC as in (16b/17b), it will usually attach itself to only one or two verbs in the series, and quite independently of factors such as the tense-aspect specification of the construction as a whole. This pattern of distribution is in contrast to R/IR marking, which normally appears on all or most verbs in a consecutivized sequence, the choice of prefix being closely related to tense-aspect features (but not rigidly determined by them: see 8.4.2).

Mé-, then, unlike the R/IR prefixes, makes a completely independent semantic contribution to each verb to which it attaches itself, in much the same way that an aspectual auxiliary would do. For this reason, it seems preferable *not* to regard it as part of the system of modal subject marking, in which it would create a three-way contrast between realis, irrealis and incompletive (partially realized) forms, but rather as one of the set of aspectual markers which normally fall under finite INFL (TENSE). Notice, however, that **mé-** is the only member of this set to be involved in suppletion, by actually replacing the expected R/IR prefix on a given verb.

Further support for the separateness of **mé-** from the R/IR system comes from its wider distribution in other construction types. In contrast to R/IR marking, incompletive **mé-** can appear in a variety of subordinate clause types eg. conditional clauses, and also in main clauses in the obligational mood, along with an overt lexical subject (see note 3 for examples). In this respect it again resembles the aspectual markers under TENSE.

8.4 Identifying the Linked Constituents

Much of the discussion of the CC so far has assumed that the consecutivized units have clausal (and not merely V or VP) status: that is, that they consist of a predicate plus all its arguments. Is this assumption justified?

8.4.1 VP Expansion

Verbs in a consecutivized series may be followed by object NPs, PPs or adverbials, indicating that the linked constituents cannot be smaller than VPs. An example of VP expansion is given in (18).

(18) **Tà-à kɨ'ɨ̂ adzī' yàa tesi**
he-P2 come LOC:place this yesterday

è- ŋa am akatè
R/SS-give me letter
He came here yesterday and gave me a letter.

8.4.2 The INFL Constituent

Non-initial verbs in a CC generally depend for their tense-aspect specification on the finite INFL preceding the first verb in the series. This dependence is seen in (19), where the T/A specification is enclosed in brackets.

(19) **Tà [-lè lô'] ŋ̀- kɨ'ɨ̂ ǹ- dzē wą vi wu**
he I -P3 P1 R- come R/SS-see child his:REF DEF

è- ŋa àghɨ atò
R/SS-give thing his

He came and saw his child and gave him a present (-le, before yesterday; **lô'**, *after something else had occurred).*

In (19) the content of INFL preceding the initial verb **kɨ'ɨ̂** is the P3 (Before Yesterday Past) clitic marker **-lè**, and the P1 (Today Past) marker **lô'**, which in this context indicates posteriority (*then, after something else*). These items have scope over all three verbs in the CC: so the "coming", "seeing" and "giving" all took place before yesterday, and all are related to some event/action which had just taken place at that time.

If there is only one INFL-P in the whole construction, then the consecutivized units must be VPs. However, the R/IR prefixes and the aspectual marker **mé-** described in

section 8.3.2 could reasonably be expected to fall under INFL, and one of these markers will appear in each CC constituent *except* the first.

These facts suggest the possibility of a split INFL. Under this analysis, one INFL component would be situated in the initial CC constituent, and would contain Tense, Negation and (almost) all the aspectuo-modal information required for the interpretation of the construction as a whole. The other INFL component would comprise the set of R/IR (or incompletive) markers, and be restricted in distribution to non-initial constituents of the CC. Each instantiation of this INFL component would have scope over one VP only. Another way to describe the facts would be in terms of two different types of INFL constituent, rather than a single INFL split into two component parts. Whichever account is adopted, however, we could argue that since each consecutivized unit includes an INFL component of some sort, it qualifies for clausal status.

There is further evidence to support a "split-INFL" or "two-types-of-INFL" analysis along these lines. Within the CC it is possible to switch from realis to irrealis mood (or vice versa), as in (20).

(20) **Tà ø lɔ'ɔsi ŋ̄- gà àbę ē- ye atò**
he PF get:up R/SS-go outside IR/SS-see him
He got up and went outside to see him.

Here the verb **ŋgà** carrying a realis prefix is followed by **ēye** marked for irrealis mood. This switch demonstrates that R/IR prefixes are not merely agreement markers determined by features in the initial INFL preceding **lɔ'ɔsi**, but are instantiations of separate INFL elements present in each consecutivized constituent. Similarly there can be a switch from perfective to imperfective aspect (or vice versa), within a CC:

(21) **Tà ø yụ nyą̀tsə ŋ̀- kɨ'ɛ́ mé- lą̀ą̀ ŋ̀- kpèl-a**
he PF buy meat R/SS-come INC-cook R/SS-eat -IMP
He has bought meat and come to be cooking and eating (it).

The final verb **ŋkpèla** carries an imperfective suffix. Imperfective marking normally appears in both preverbal and postverbal positions:

(22) **Bɨ -à ŋ̃-kpèl-a**
you:PL-IMP R-eat -IMP
You(p) are eating/You(p) eat.

If preverbal imperfective marking is in INFL, we can regard the postverbal marker as an agreement suffix. The appearance of imperfective agreement on **ŋ̃kpèla** in (21) shows that it is not dependent for its aspectual specification on the content of INFL preceding the first verb **yu̧**, which has the feature [+perfective], but on the presence of a separate but (in this instance) phonologically unrealized INFL item, the feature [+imperfective], preceding **ŋ̃kpèlá**.

To summarize: The content of the INFL component preceding non-initial verbs in the CC is highly constrained, being confined to the set of R/IR (or incompletive) markers, or showing up in the form of agreement marking on the verb, the relevant item in INFL being itself phonologically null. However, it is significant that an INFL node *is* projected in each consecutivized unit, with (one assumes) its own Spec position available to an external (subject) argument. These facts lead us to conclude that every consecutivized unit must have clausal status.

8.4.3 Conjunctions

The evidence presented in the preceding section suggests that each CC unit could be defined as a clause with a null subject and R/IR (or incompletive) marking in INFL. Under this definition, the sentences in (23) qualify as CCs. Here, however, the lexical items **tê**, *until*, **ká**, *before* and **kà**, *without*, in (a), (b) and (c) respectively, intervene in the middle of the consecutivized clause sequence.

(23)a. **Bɔ ø bû' mé- tu tê mé- kɨ'ɨ**
they PF begin INC-dig until INC-come

adzì'a kɔ̃ ɲ̃- dzɛ̌ ŋ̃dʊ̧ yu
LOC:place certain R/SS-see giant:rat DEF

They began to dig until they reached a certain place and saw the giant rat.

b. **Tà-lè ghɪ̃ na ká m̃- bɔ èkab â?**
he-P3 do how before R/SS-have money Q
How did he get rich?
(Lit: How did he do before he had money?)

c. **Ñ-de gha a ntɔ' Fǫ̀**
I-P3 go LOC palace (of) chief

kà ē- ye atò
without IR/SS-see him
I went to the Chief's palace but did not see him.
(Lit: *...without seeing him)*

The items **tê**, **ká** and **kà** may not take a simple NP complement, so it seems that they should not be categorized as prepositions:

(24)a. ***Bɔ̀ -le wua ǹ-tù -a tê**
they-P3 CONT R-dig-IMP until

èlə' ǹdǔ yu
hole (of) giant:rat DEF
They were digging up until
the giant rat's hole.

b. ***Tà-lè bɔ ekab ka vi vi**
he-P3 have money before wife his:REF
He became rich before his wife.

c. ***Ñ-de gha a ntɔ' Fǫ̀ kà tò- à**
I-P3 go LOC palace (of) chief without him-FOC
I went to the chief's palace without him.

They may however be followed by a "different-subject" (as opposed to a "same-subject") structure ie. by a clausal complement with a lexical NP in subject position:

(25)a. **Abə mé- kpela àkpę nyą̀ yu tê a mî**
dog INC-chew bone meat DEF until it be:finished
Dog kept chewing the meat-bone
until it was finished.

b. **Tà-lè ghɨ̄ na ká vi vi ø bɔ èkab â?**
he-P3 do how before wife his:REF PF have money Q
What did he do to make his wife rich?
(Lit: How did he do before his wife had money?)

c. **Ñ-de gha a ntɔ' Fǫ̀ kà tà ø wu kô**
I-P3 go LOC palace chief without he PF even know
I went to the chief's palace without
him even knowing. (Lit:...without he even knew)

We conclude from (24) and (25) that **tê**, **ká** and **kà** are not prepositions introducing adjunct phrases, as some of the English glosses in (23) misleadingly suggest, but conjunctions with clausal (IP) complements. If this is the case, then we will assume for the present that the conjunction occupies COMP (but see 9.1.4 and 9.3.3 for further discussion), and that the consecutivized units are CPs.

Notice further that in (23b) the wh-expression **nâ**, *how* intervenes in the middle of the CC. Wh-expressions of the set to which **nâ** belongs are restricted to main clauses and remain in situ ie. in the clause-final adverbial position adjoined to CP (or IP). **Nâ** thus terminates the initial matrix clause in (23b), leading us to the conclusion that the following consecutivized unit has clausal (CP or IP) status.

8.5 The Relation between the Linked Constituents: Coordination or Subordination?

If the basic "building blocks" of a consecutive structure are CPs or IPs (clauses), the next question is whether the relationship between them is one of coordination or subordination.

Longacre (1985) maintains that the notions of coordination and subordination are suspended in what he calls "clause-chaining" languages. Li and Thompson (1973) argue for two different representations for what they call "serialization" in Chinese: a subordinate structure for a sentence with a purpose reading, and a coordinate structure for a sentence interpreted as sequential, simultaneous or alternating action.

For Mundani, I shall argue for a relationship of subordination between the initial CP constituent in the series, and subsequent consecutivized constituents. There is also some (weaker) evidence to indicate that non-initial constituents may be subordinated one to the other, yielding a structure with multiple layers of embedding.

There are four kinds of evidence that point to subordination.

8.5.1 TAM/NEG marking

As already discussed in section 8.4.2, the content of the INFL component preceding non-initial verbs in the CC is restricted to the set of R/IR (or incompletive) markers, plus the phonologically unrealized feature [+imperfective] that shows up in agreement marking on the verb. In particular, the possible realizations of INFL in these clauses never include Tense. That is, non-initial clauses are tenseless, with non-finite verb forms. It is relevant

tc note at this point that consecutivized verb forms with the irrealis prefix **ē-** are the citation forms of the verbs concerned, and are used also as the infinitival complement of the verb **ēkɨ́** "to want".

Although other subordinate clause types in the language may be tensed, with finite verb forms, (see note 3, example (a)), their possibilities for TAM marking are limited in a variety of ways according to clause type; so the constraints on such marking in non-initial clauses of the CC suggest that these, too, are subordinated to the initial clause in the sequence.

It is also significant that NEG marking appearing in the initial clause of the CC will frequently have scope over all clauses in the series. (26a/b) are the negative versions of (15a/b), where **kà'à** and **ka** take scope over the entire clause chain.

(26)a. Realis

Tà -à kà'à nɨŋ medzù' mi ǹ- dą̄ ǹ- dzɨ́
she-P2 NEG take yams her:REF R/SS-cook R/SS-eat
She did not take her yams or cook (them) or eat (them).

b. Irrealis

Tà ka nɨ́ medzù' mi
she [+F] NEG take yams her:REF

ē- lą̄ą̄ ē- dzɨ́-a
IR/SS-cook IR/SS-eat-F
She will not take her yams or cook (them) or eat (them).

This interpretation of NEG suggests a relationship of semantic-syntactic dependence between non-initial clauses on the one hand, and the initial clause on the other.

However, if the initial clause has no NEG marker, negation may be introduced into a subsequent clause by means of the conjunction **kà**, *without*, as already illustrated in (23c). Also, conjunctions such as **tê**, *until* and **ká**, *before* may block negation, preventing it from extending into subsequent clauses. So (27) is ambiguous, according to whether **tê** does or does not block negation, while in (28) **ká** unambiguously blocks the influence of NEG, confining it to the initial clause.

(27) Bɔ̀ -le ka'a tu tê mé- kɨ'ɨ adzì'a kɔ̄..
they-P3 NEG dig until INC/SS-come LOC:place certain
(i) They did not continue digging, until they came to a certain place (and only then they started to dig again).
(ii)They did not continue to dig until they came to a certain place. (ie. Since they did not continue to dig, they never reached the place at all.)

(28) Tà-lè ka'a ghɨ̄ ane , ká m̀- bɔ èkab
He-P3 NEG do thus before R/SS-have money
He didn't do this before becoming rich.
(ie. He didn't do this, but he still became rich, perhaps by other means.)

As far as NEG marking is concerned, then, the evidence for the dependence of non-initial clauses on the initial clause of the CC is far less conclusive than is the case with Tense marking.[4]

8.5.2 Dependent vs. Independent Verb Forms

Non-initial verbs in the consecutive series are "dependent" in the sense that they must be preceded by another lexical verb; they cannot stand alone. In contrast, the initial verb in the series is "independent" in that it need not be preceded by any other verb. Thus in (29a) **m̀bù'** is a dependent form correctly preceded by another verb, but (29b) is ungrammatical since **m̀bù'** lacks the support of a preceding verb.

(29)a. Tà ø lɔ'ɔsi m̀- bù' mé- fà'a
he PF get:up R/SS-begin INC-work
He got up and began to work.

b. *Tà ø m̀-bù' mé-fà'a

This distinction between dependent and independent verb forms tends to confirm the case for subordination of non-initial clauses in the CC. Since independent verb forms are found in subordinate as well as non-subordinate clause-types, however, the evidence is not clear-cut.

One would also have to account for the fact that in the imperfective, the verb in initial position in the CC is a *dependent* form, rather than an independent one as expected:

(30) Imperfective

Tà-à ŋ̀-kɨ̀'- â ǹ- dzɨ́-a èghɨ́dzɨ́ bi
he-IMP R-come-IMP R/SS-eat-IMP food REF:his
He comes and eats his food (habitually).

It appears that the imperfective morpheme is radically different from other tense-aspect markers in INFL, in that it takes a clausal complement with a dependent verb form. The reason for the absence of an independent verb form at the beginning of the imperfective sequence is not known.

8.5.3 Adverbial Frontshifting

In main clauses, adverbials may be topicalised by frontshifting: that is, by movement to an IP adjunction position (see 4.2.1.2 for an account of topicalisation). This process of frontshifting is illustrated in (31a/b).

(31) Main Clause

a. **Bɔ -ɔ̀ ǹ-dzɨ́-a afɨ́' yaa**
they-IMP R-eat-IMP LOC:time this
They are eating now.

b. **Afɨ́' yaa bɔ-ɔ̀ ǹ-dzɨ́-a**
Now they are eating.

Adverbial frontshifting is prohibited in subordinate clauses of all types, and also in non-initial clauses within the CC, providing a strong case for the subordinate status of the latter. So in (32a), **afɨ́' yaa** appears in a purpose clause; but in (32b), the starred reading is not possible, since the adverbial can be interpreted only as a part of the preceding main clause, and not as a frontshifted element within the subordinate clause. The same observations can be made about the adverbial **afɨ́'a ŋgaa yu** in the CC construction in (33a/b).

(32) Purpose Clause

a. **Àvi wu -à ǹ-dạ̀ -ạ akɨ̀ŋ**
woman DEF-IMP R-cook-IMP cooking-pot

m̀bɨ́'ɨ́ bɔ̀ dzɨ́ afɨ́' yaa
so:that they SUBJ:eat LOC:time this
The woman is cooking a meal
so that they can eat now.

b. **Àvi wu-à ǹdạ̀ạ akɨ̀ŋ afɨ́' yaa m̀bɨ́'ɨ́ bɔ̀ dzɨ́**
**The woman is cooking a meal so that now they can eat./The woman is cooking a meal now, so that they can eat.*

(33) CC

a. **Tà-lè ghà awen ǹ- dzʊ̄ afɨ́'a ŋgaạ yu**
he-P3 go LOC:market R/SS-buy LOC:time that DEF
He went to market and bought (it) at that very time.

b. **Tà-lè ghà awen afɨ́'a ŋgaa yu ǹdzʊ̄**
**He went to market and at that very time bought (it)./He went to market at that very time and bought (it).*

8.5.4 NP Extraction

In Mundani, extraction of an object NP from a coordinate structure is possible only when it is across-the-board (ATB): that is, from every object position in the entire structure. Thus (34a) is grammatical, since extraction is from both object positions; but in (34b) extraction is from one object position only, and the sentence is ill-formed.

(34)a. **Dzə tu$_i$ àvi wu è ø fele t_i**
goats DEF woman DEF she PF drive

lʊ tò è ø bạạ t_i la
husband her he PF catch SUB

The goats that the woman has driven away and that her husband has caught...

b. ***Dzə tu$_i$ àvi wu è ø nɨ́ ayɨ́t**
goats DEF woman DEF she PF take stick

lʊ tò è ø bạạ t_i la
husband her he PF catch SUB

The goats that the woman has taken a stick and that her husband has caught...

In subordinated structures, on the other hand, extraction is permitted even if it is not ATB, as seen in (35a) which is perfectly grammatical.

(35)a. Ebu' lu; bɔ ø ŋa èli' m̀bɨ̀'ɨ́/nê
bundle DEF they PF give rope in:order:that

tà kuule t; la
he SUB:tie SUB

The bundle that they gave a rope
in order that he should tie (it)...

Similarly in a CC, extraction of an object NP from a non-initial clause need not be ATB - which would support the case for a subordinated structure.

(35)b. Ñdù̀ yu; bɔ ø bû' mé- tu si
giant:rat DEF they PF begin INC-dig ground

tê mé- kɨ́'ɨ́ adzì'a kõ ǹ- dzě t; la
until INC-come LOC:place certain R/SS-see SUB

The giant rat that they began to dig the ground
until they reached a certain place and saw (it)..

8.5.5 Summary

The facts about TAM/NEG marking, dependent and independent verb forms, adverbial frontshifting and NP extraction point to a superordinate-subordinate relation between the initial clausal constituent in the CC and subsequent consecutivized constituents.

Furthermore, non-initial clauses may fulfil at least some of the functions that subordinate clauses perform elsewhere in the language. For example, they may encode the temporal sequence of two or more events, or they may modify a preceding clause by adding to it an adverbial or directional meaning. Each of these functions is performed in relation to the immediately preceding clause, whether or not this clause is initial in the series. This fact suggests (although it does not prove) that each non-initial clause is subordinated not only to the highest clause in the tree, but also to the clause that immediately precedes it: in other words, that the CC has multiple layers of embedding.

CHAPTER 9 - THE CATEGORY AGR: SYNTAX

9.0 Introduction

In seeking to arrive at a satisfactory syntactic analysis of non-finite INFL (AGR), we continue to focus on the Consecutive Construction (CC). On the strength of the evidence outlined in chapter 8, our account will rest on two assumptions:

(i) that the linked constituents have clausal status, being either CPs or (at least) IPs;

(ii) that each clausal constituent is subordinated to the immediately preceding one.

The empirical facts that the proposed analysis must account for include the following:

(i) only one logical subject is overtly present in the syntax;

(ii) R/IR prefixes have a triple syntactic role as modal markers, as encoders of the notion "same-subject", and as markers of a particular kind of subordinate (complement) clause.

This system of combined modal-subject-complement marking can be viewed in two ways. One possible approach is based on Finer's (1985) Government Binding account of Switch Reference (SR) languages; the other approach is in terms of Control Theory, drawing on ideas from Borer's (1989) work on anaphoric AGR. The latter seems to offer a more satisfactory account of the CC construction and of the role of R/IR marking in it. However, it is interesting that *both* approaches can be applied to the data in this instance. This fact lends support to Borer's remark (made almost as an aside) that certain parallelisms exist between the syntax of Switch Reference and the syntax of Control, and that these two related systems may yet prove amenable to a unitary analysis.

9.1 A Switch Reference Analysis

The approach discussed in this section is based on Daniel Finer's (1985) analysis of Switch Reference languages, within the framework of Government Binding Theory. It will be seen that this type of analysis accounts successfully for certain properties of the Mundani CC, including the "same-subject" and subordinating functions

of the R/IR prefixes. The analysis fails in other respects, however. In particular, it rests on certain assumptions about SR languages that are not confirmed by cross-linguistic comparison.

9.1.1 Switch Reference Systems

Switch Reference (SR) is defined by Haiman and Munro (1983) as "an inflectional category of the verb, which indicates whether or not its subject is identical with the subject of some other verb." (p.ix) This definition describes one function of R/IR verbal prefixes in Mundani, which are used obligatorily to indicate that the subject of a consecutivized verb is coreferential with the subject of an immediately preceding verb.

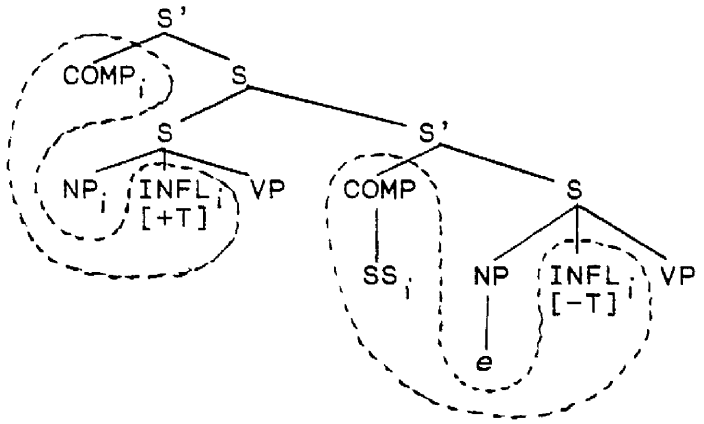
Normally in an SR system, either both SS and "different-subject" (DS) will be marked, or DS only. Mundani is unusual in marking SS only - although similar systems are reported in other West African languages eg. Gokana (Comrie 1983). Mundani SS marking *is* typical in that it is used irrespective of the person/number/gender of the NP concerned.

Comrie (1983:23) asserts that SR marking operates typically at clause-level. It is, he says, "a characteristic of the dependent clause as a whole, and it is of secondary importance whether this marking is placed at the end of the clause, or in whatever position is used in the language for sentence particles, or on the verb as prime constituent of the clause." In Mundani, we have assumed that SS marking falls under non-finite INFL (5.2) and is affixed to the verb at PF; so it seems to follow a characteristic pattern.[1]

9.1.2 Finer's analysis applied to the Mundani CC

As modal markers, the Mundani R/IR morphemes would seem to belong to INFL. As markers of a particular type of subordinate clause, however, they could be said to fall more naturally under COMP. Suppose this to be the case, we could then assume the structure proposed by Finer for SR languages to account for the CC in Mundani. We adopt for the moment Finer's labelling of clause-level nodes.

(1)



In (1), the SS-marking is in an Ā-position, and thus does not bind the empty category in the subject (A-) position of the lower clause. In Finer's account, the SS marker is an Ā-anaphor with the feature specification [-pronominal, +anaphor]; therefore it must be bound in its governing category to satisfy Condition A of the Binding Theory.

What *is* the governing category of an Ā-anaphor in COMP? Finer adopts Belletti and Rizzi's (1981) definition:

(2) α is the governing category for β iff α contains β, a governor of β, and a SUBJECT accessible to β (where coindexing β with the SUBJECT does not violate the "i-within-i" condition, and SUBJECT c-commands β)

Finer further adopts the head-to-head principle viz: that the head of the category can govern not only a sister projection, but also the head of that projection.

He then makes the assumption that the SS morpheme in COMP forms a discontinuous constituent with the INFL/AGR node. These discontinuous constituents are circled in (1). The effect of this assumption, along with coindexing the [NP,S] with INFL/AGR, is that the SS marker and [NP,S] share an index.

The COMP/INFL/AGR complex is the head of S'. This complex in the upper S' governs the same complex in the lower S', and government is a special case of c-command. The INFL/AGR node in the matrix S' is a SUBJECT accessible to the COMP position in the lower S'. Coindexing this lower COMP with the upper INFL/AGR node does not violate the i-within-i condition; and the upper INFL/AGR node, through its participation in the larger discontinuous constituent and the head-to-head principle, governs and therefore

c-commands the COMP in the lower S'. In (1), this means that the governing category for SS is the higher S' containing NP. The "same-subject" marker is bound in its governing category, thus satisfying Condition A of the Binding Theory.

Note that although the upper NP c-commands the lower NP (at least if c-command is defined in terms of maximal projections rather than first branching nodes), the coindexation of these two NPs does not fall under Condition A as it is too non-local. Instead, the fact that the upper COMP/INFL/AGR constituent binds the lower one entails that the upper and lower NP subjects are referentially linked by virtue of the transitivity of indices.

To summarize: the SS marking is accounted for not by a direct relation between two subject positions, but indirectly by a head-to-head relation between two A-elements, together with the transitivity of indices among [NP,S], INFL/AGR and COMP.

9.1.3 Advantages of an SR analysis

This approach to the analysis of the CC in Mundani has a number of advantages. It explains why only one subject NP need be realized overtly,[2] and also the coreference between the different subject positions. The "same-subject" function of R/IR morphemes is accounted for in terms of anaphoric binding. Since the SS markers appear under COMP, their syntactic role as subordinating conjunctions follows naturally. The selection of a given SS morpheme in COMP is, of course, determined by features of the INFL node that forms a complex constituent with the COMP node concerned.

9.1.4 Disadvantages of an SR analysis

Despite the advantages of Finer's analysis, however, it poses several problems. Firstly, it seems more likely that R/IR modal marking would be base-generated under INFL than under COMP; and the link that the account posits between COMP and INFL constituents does not entirely remove this difficulty.

Secondly, Finer's account depends crucially on the rather clumsy discontinuous COMP/INFL/AGR constituent. One questions whether a similar effect could not be achieved more satisfactorily through the chain of head-to-head relations in a binary branching structure, as suggested in 9.2.4.

A further problem with Finer's analysis is that the type of structure that he proposes and that is sketched in (1) is inadequate to handle sentences such as those in (23), section 8.4.3, repeated here as (3).

(3)a. **Bɔ̀ ø bû' mé- tu tê mé- kɨ'ɨ**
they PF begin INC-dig until INC-come

adzî' -a kɔ̃ ñ-dzɛ̃ ñdʉ̀ yu
LOC:place-AM INDEF R-see giant:rat DEF
They began to dig until they reached a certain place and saw the giant rat.

b. **Tà lè ghɪ̃ na kā m̃-bɔ èkab â?**
he P3 do how before R-have money Q
How did he get rich?
(Lit: How did he do before he had money?)

c. **Ñ-de gha a ntɔ' Fɔ̰ kà ɛ̃ -ye atɔ̀**
I-P3 go LOC palace (of) chief without IR-see him
I went to the chief's palace but did not see him.
(Lit: ...without seeing him)

In (3), the SS morpheme is preceded by another subordinating conjunction: **tê**, **kā** or **kà**. If we maintain that both SS marker and conjunction occupy COMP, then COMP has two fillers, and the structure should be disallowed. Of course this problem would not arise if the conjunction occupies some higher (COMP) adjunction position. However, the link between COMP and INFL that is essential to Finer's analysis complicates the picture, making it necessary to stipulate that only the *lower* COMP in a given structure forms a discontinuous constituent with INFL/AGR. (See section 9.3.3 for further discussion of conjunctions of the **tê/kā/kà** type.)

A fourth, more serious, problem with Finer's whole approach is that some of its assumptions about SR languages are not borne out cross-linguistically. Tsujimura (1987) lists some of the unjustified assumptions that Finer makes about SR systems. They include the following:

(4) Finer's Assumptions and Tsujimura's Objections to them

(a) SR languages are necessarily configurational. At least one SR language (Walbiri) is not.

(b) SR morphemes have a "COMP-like" quality. The notion "COMP-like" remains vague. Also, by Finer's own admission, SR morphemes may have the additional function of temporal/aspectual/modal reference, and such values are more commonly associated with INFL than with COMP.

(c) SR morphemes occupy syntactic nodes. This assumption (according to Tsujimura) leads to problems in languages that have multiple and discontinuous SR marking.

(d) SR marking is necessarily orientated towards subjects (which is true for Mundani). However, some SR systems have a referential link between the subject of one clause and the *object* of another. Such cases are accommodated with difficulty in Finer's analysis.

(e) The status of the functional category "subject" is clear. In fact, there are difficulties in defining the notion of subject, and the relationship between [NP,S] and INFL/AGR is not always as straightforward as Finer's approach assumes.

(f) SR marking is confined to subordinate structures. Finer's analysis depends on this assumption, otherwise one subject would not c-command the other and Binding Principles could not apply. There is evidence, however, that SR occurs in coordinate structures in many languages (see Comrie 1983; Franklin 1983; Roberts 1988, etc.)

These points cannot be addressed here, but they weaken the motivation for the proposed analysis, and prompt the search for an alternative account of the Mundani CC that has more universal applicability.

9.2 A Control Analysis

Rather than thinking about the CC in terms of a system of Switch Reference marking, one could regard it as a "Control" structure: that is, as a series of one or more non-finite clausal complements with null subject elements "controlled" from the superordinate matrix clause.

We shall give a brief overview of some previous approaches to Control Theory, based for the most part on data from English, and then focus on ideas developed by Borer (1989) which seem to provide a more satisfactory account of the facts in Mundani.

9.2.1 Distribution of PRO in English

In English, tensed (finite) clauses may not have a null subject, as seen in (5):

(5) *** ....went mountain-climbing.**

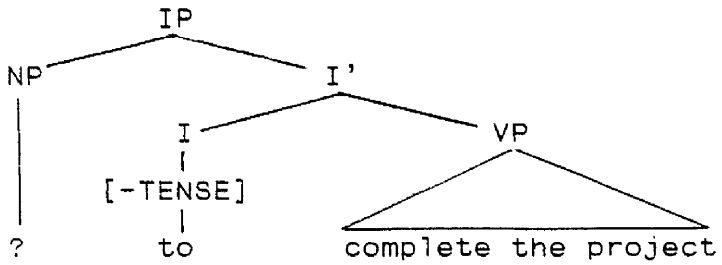
In non-finite embedded clauses, however, a null subject is actually required, as illustrated in (6):

(6)a. **We tried [....to complete the project]**
   b. ***We tried [we to complete the project]**
   c. **[....to complete the project] would be foolish**
   d. ***[We to complete the project] would be foolish**

In (6a/b) the non-finite embedded clause functions as the complement of "tried"; in (6c/d) it functions as the subject of "be". (6b) and (6d) are both ungrammatical, since the NP functioning as subject of the embedded clause is realized overtly.

Given the Projection Principle and the Theta Criterion, arguments associated with a given predicate must be represented in the syntax. Furthermore, according to the Extended Projection Principle (EPP), all clauses (projections of INFL) must have a subject position. We are forced to conclude, then, that the syntactic structure of the embedded clause in (6a) and (6c) must be roughly that shown in (7), where the subject position [Spec,IP] is filled by some kind of non-overt NP element.

(7)



In such a structure, what is the nature of the element in [Spec,IP]? It is assumed in standard GB accounts that the null subject of such non-finite clauses will be the empty pronominal anaphor PRO. Since PRO has both pronominal and anaphoric features, it would have to be both bound and free in the same domain under Conditions A and B of the Binding Theory. It is therefore stipulated that PRO can only occupy a position where it is ungoverned, and so may be either bound or free. Since it is ungoverned, it follows that it cannot receive Case; and since it cannot receive Case it cannot be replaced by a lexical NP (Chomsky 1981).

Some of these assumptions about the distribution and properties of PRO have been challenged in recent work. For example, Lasnik (1992) argues that PRO *is* capable of being Case-marked, while Franks and Hornstein (1992) draw evidence from "Case-visible" PRO subjects in Russian to show that PRO *can* be properly governed by a lexical head. Nevertheless, we shall assume the standard GB account of PRO for the purposes of this study.

9.2.2 Referential Possibilities of PRO in English

The problem remains as to how PRO in English receives an interpretation in the various contexts in which it occurs.

In (6a), it is interpreted as coreferential with the subject "we" in the matrix clause. In order to explain such a relationship between PRO and an antecedent in the matrix clause, the notion of "Control" is introduced: that is, PRO, having no governing category, is accessible to coindexation with an antecedent outside its own clause. In (6a), the antecedent "we" is termed the "controller".

In English, PRO may be controlled by either a matrix subject or object, as seen in (8) and (9). (Examples (8) through (10) are from Manzini 1983).

(8) Subject Control

John$_i$ promised Bill$_k$ [$_{CP}$ [$_{IP}$ PRO$_{i/*k}$ to shave himself]]

(9) Object Control

John$_i$ asked Bill$_k$ [$_{CP}$ [$_{IP}$ PRO$_{k/*i}$ to shave himself]]

In other instances, PRO is coreferential with neither the subject nor the object of the matrix clause, but has arbitrary reference:

(10) Arbitrary Reference

John$_i$ was asked [$_{CP}$ how [$_{IP}$ PRO$_{arb}$ to behave oneself]]

Instances of "backward" Control are also recognized, as in (6c) above, or (11) below, taken from Larson et al (1992):

(11) Backward Reference

[$_{CP}$ [$_{IP}$ PRO$_i$ learning about dinosaurs]] thrilled Oscar$_i$

9.2.3 Some Theories of Control

Several theories have been developed to try to account for the various (co)referential possibilities of PRO in languages such as English. We touch on only a few of these approaches here.

Williams (1980) distinguishes between obligatory predication Control, where [PRO VP] is coindexed with a c-commanding NP and optional non-predication Control, where PRO, or a lexical NP subject, need not have a binder at all, but is assigned a free index (arb). This index may then undergo a rewriting rule, in which case PRO will eventually receive the index of the Control sentence, but a lexical NP will not.

Bresnan's (1982) theory distinguishes between functional Control that applies only to PRO, and anaphoric Control that applies either to PRO or to lexical subjects. Her approach predicts that in cases of functional Control there must be an antecedent to PRO, that this antecedent must be uniquely determined, and that there can be no counterparts with lexical subjects. In cases of anaphoric

Control almost precisely the opposite properties obtain: there need be no antecedent to PRO; if there is an antecedent, it need not be unique; counterparts with lexical subjects are acceptable. These two sets of properties parallel those predicted for obligatory predication Control and optional non-predication Control respectively, in Williams' theory. So it appears that Williams' and Bresnan's proposals, while using different terms, are conceptually similar.

Despite the number of available theories, there is still uncertainty as to the full range of factors governing the (co)referentiality of PRO: that is, the properties of Control are not clearly defined. The presence of the ungoverned pronominal anaphor PRO is at the root of the problem, preventing an account of structures exhibiting Control effects in terms of standard Binding Theory, and forcing the development of a separate (poorly understood) Control Module.

For these reasons it has been suggested that maybe the empty subject of a non-finite embedded clause is *not* PRO. For instance, Manzini's (1983) theory of Control refers not to pronominal anaphors with the features [+anaphoric, +pronominal], but to pure anaphors specified as [+anaphoric, -pronominal]. This enables her to present her theory not as a separate module, but as a corollary of that part of standard Binding Theory that refers to anaphors in general (Chomsky 1981) - although with some adjustments to the definition of governing category.

Unlike Manzini, Bouchard (1984) suggests that the null subject of a non-finite clause may be freely assigned either anaphoric or pronominal features.

Borer (1989) differs again in proposing that such a null subject is an empty pronominal with the feature specification [-anaphoric, +pronominal]: that is, *pro*. Along with this proposal, she suggests that the anaphoric features absent from the NP position are associated instead with an AGR component in INFL. These ideas, when applied to the Mundani data, seem to offer interesting ways of accounting for consecutive clause structure, for the role of R/IR marking in this configuration, and for the distinctive characteristics of finite and non-finite INFL in the language.

9.2.4 Control in the Mundani CC

9.2.4.1 The Null Element in Subject Position: PRO or *pro*?

Observe first that, as in English, Mundani tensed (finite) clauses may not have a null subject:

(12) *** lè kɨ'ɨ**
P3 come
He/She/You/We...came.

Also as in English, non-finite embedded clauses require a null element in subject position. So the non-finite consecutivized clauses in the (a) sentences in (13) and (14) are grammatical, while the (b) sentences with an overt subject pronoun in the consecutivized clause are not.

(13)a. **Tà$_i$ ø kɨ'ɨ [....ē- ye atò$_k$]**
he PF come IR-see him
He$_i$ has come to see him$_k$.

b. ***Tà$_i$ ø kɨ'ɨ [tà$_i$ ē- ye atò$_k$]**
he PF come he IR-see him
He$_i$ has come he$_i$ to see him$_k$.

(14)a. **Tà$_i$ ø pàà atò$_k$ [.... ŋ̀-kpen asi]**
he PF push him R-fall LOC-ground
He$_i$ has pushed him$_k$ and fallen down.

b. ***Tà$_i$ ø pàà atò$_k$ [tà$_i$ ŋ̀-kpen asi]**
he PF push him he R-fall LOC:ground
He$_i$ has pushed him$_k$ he$_i$ has fallen down.

Under the conventional GB approach, the structure of the CCs in (13a) and (14a) might be schematized as in (15a/b):

(15)a. **Tà$_i$ ø kɨ'ɨ [[PRO$_i$ ē- ye atò$_k$]]**
he PF come CP IP IR-see him
He$_i$ has come to see him$_k$.

b. **Tà$_i$ ø pàà atò$_k$ [[PRO$_i$ ŋ̀-kpen asi]]**
he PF push him CP IP R-fall LOC:ground
He$_i$ has pushed him$_k$ and fallen down.

PRO, having no governing category, is available for coindexation with an antecedent outside its own clause. In (15a/b) PRO is coindexed with (controlled by) the subject NP in the matrix clause. In contrast to English, the only possible controller in Mundani is the matrix subject. Object Control (16), arbitrary reference (17) or backward reference (18) are disallowed.

(16) Object Control

*Tà$_i$ ø pàà atò$_k$ [[PRO$_k$ ŋ̀-kpen asi]]
he PF push him CP IP R-fall LOC: ground
He$_i$ has pushed him$_k$ and he$_k$ has fallen down.

(17) Arbitrary Reference

*Tà$_i$ ø kɨ'ɨ̀ [[PRO ē- ye atò$_k$]]
he PF come CP IP arb IR-see him
He$_i$ has come that one will see him$_k$.

(18) Backward Reference

*[PRO$_i$ ē- bene àben yu ale],
IR-dance dance DEF thus

a- a mé- bɔ̃ awe$_i$ -le'?
it-F INC-be:good to:you-EQ
To dance that dance, does it please you?

While the controller is always the subject of the matrix clause, the controlled element in the embedded (consecutivized) clause is also the logical subject of that clause: in other words, the relation is a subject-to-subject one.

The question that arises is whether the null subject in the Mundani CC is best analysed as PRO.

We have seen how, at PF, realis/irrealis modal marking attaches itself to the consecutivized verb, where it encodes the notion of "same-subject": that is, it indicates that the implied subject of that verb is coindexed (coreferential) with the subject of the immediately dominating (matrix) clause. The R/IR morpheme, then, is anaphoric in the sense that it is coindexed with an antecedent; but the problem is that this antecedent is outside the governing category of the R/IR morpheme that it is supposed to bind, and thus violates Principle A of the Binding Theory.

Now consider the situation at D-structure. The R/IR morpheme, as a marker of a modal category, is taken to be base-generated under non-finite INFL. If, as Borer (1989) suggests, anaphoric features are associated with an AGR component in INFL instead of with an NP position, and if Mundani R/IR marking in non-finite INFL has an anaphoric function as already described, we can tentatively characterize Mundani non-finite INFL as having the features [-TENSE, +AGR]. This feature specification is

the converse of finite INFL, which has the features [+TENSE, -AGR]. By abstracting away the anaphoric feature from the NP in subject position in the consecutivized clause, we conclude that the null element in this position must be specified as [-anaphoric], while retaining the feature [+pronominal]. In short, this null subject is not PRO, but the empty pronominal *pro*.

Borer's approach, then, opens up the possibility of accounting for the differences between the matrix and subordinate INFL components in the CC, as well as the distribution of null and lexical subject NPs. We shall therefore leave aside other accounts of Control, and attempt to extend Borer's theory in relation to the Mundani data.

9.2.4.2 Two possible analyses of INFL

If in the CC the subject of each non-finite complement clause is *pro*, we cannot look to its anaphoric features to account for its obligatory referential dependence on a matrix argument ie. for Control effects. Borer argues that the anaphoric features are located instead in an AGR component in INFL. In other words, suppose that INFL comprises two parts: a TENSE component containing features of Tense and Aspect, and an AGR component. In the case of the Mundani CC, we can adopt one of two possible accounts (already introduced briefly in 8.4.2):

(a) We can give a "split INFL" analysis, according to which the TENSE component of INFL is situated in the matrix clause, while the AGR component is located in the non-finite complement clause; but since TENSE and AGR form part of a single (discontinuous) constituent, both project to IP.
(b) Alternatively we can regard TENSE and AGR as two distinct syntactic categories, projecting to TP and AgrP respectively.

Under either analysis the two items are (almost) mutually exclusive. AGR is confined to non-finite complement clauses within a CC; TENSE appears in most other clause types ie. in matrix clauses, and in subordinate clauses with a finite verb and a lexical NP subject. Also the potential content of the two components/categories is different. TENSE may contain a clitic or particle tense-aspect marker, an optional NEG marker, and up to

three auxiliary verbs. The content of AGR is restricted to an obligatory R/IR (or incompletive) prefix and the optional feature [+imperfective]. The incompletive marker and the feature [+imperfective] are evidence of some slight overlap between TENSE and AGR. However, incompletive **mé-** is a suppletive form in AGR (since it merely replaces an R/IR prefix); and whereas in TENSE the feature [+imperfective] is realized phonetically, in AGR it remains phonetically null, surfacing only in the agreement suffix on the verb. Notice finally that the fact that TENSE and AGR are discrete elements is not a necessary consequence of Borer's theory, but simply a statement of the facts in Mundani.

Both "split IP" and "TP-AgrP" approaches give satisfactory results in our analysis of the CC, and there seems no particular reason to favour one above the other. For the remainder of this discussion we adopt the labels TP and AgrP: that is, we regard TENSE and AGR as separate syntactic categories - not so much for theoretical reasons as to make it easier to distinguish between the two.

As already mentioned, Borer proposes that the AGR component has the "N-like" property of anaphoricity: that is, it is referentially dependent on an antecedent. Since it is an N-type element, its dependency on an NP antecedent rather than on a higher AGR in INFL is plausible. TENSE, on the other hand, is a [-N] element, and so is not linked referentially with any antecedent: in other words, it is [-anaphoric].

A final property that distinguishes TENSE from AGR concerns Case assignment. TENSE assigns Case to its Spec (subject) position, which must therefore be filled by a lexical NP. AGR, on the other hand, being a [+N] element, must move to a position where it can itself receive Case. This means that AGR is *not* a Case assigner, and so its Spec (subject) position may not be filled by a lexical NP.

The differing properties of Mundani TENSE and AGR are summarized in (19):

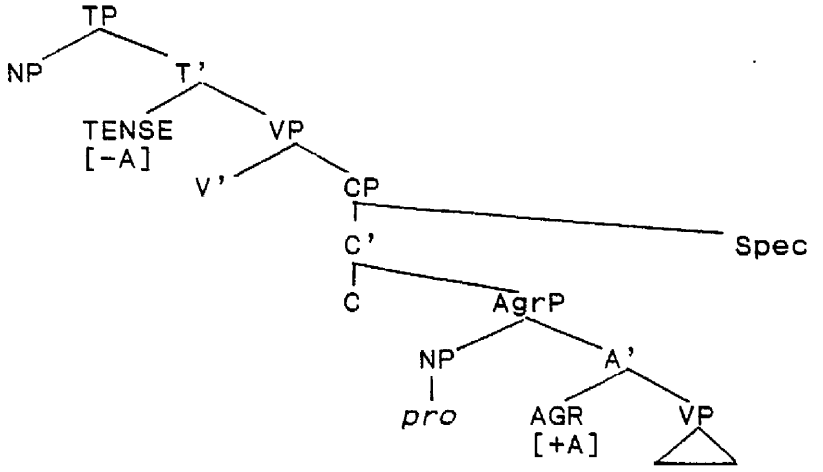
(19)

	TENSE	AGR
Location	matrix or subord clause with finite verb form	consecutive complement clause with non-finite verb form
Content	T/A clitic/particle optional NEG 1-3 optional AUXes	R/IR (INC) prefix optional feature [+IMP]
Features	[-N] [-anaphoric]	[+N] [+anaphoric]
Case assigner?	yes, so has lexical subject	no, so has null subject

9.2.4.3 Borer's Analysis applied to Mundani

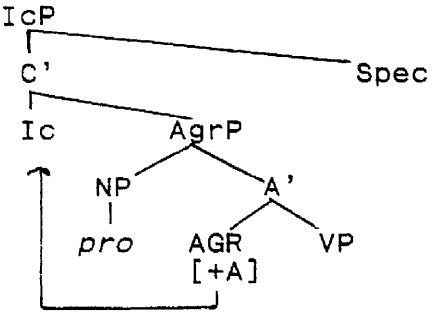
Let us now assume that the Mundani CC has (basically) a binary branching structure as in (20). Recall that [Spec,CP] is on a *right* branch, surfacing in clause-final position (3.1.4).[3]

(20)



As already observed, the features [-anaphoric] and [+anaphoric] are inherent to TENSE and AGR respectively. Since [+anaphoric] AGR is an N-type element, it raises to the nearest COMP position to receive Case. In this position it becomes the derived head of CP, receiving in Borer's account the new label Ic. The features of Ic percolate upwards to the maximal projection that dominates it: that is, to CP, re-labelled IcP:

(21)



Ic shares the binding domain of its maximal projection IcP. If there is a coindexed c-commanding antecedent for IcP within this domain, the derived head Ic of IcP will be bound by such an antecedent, and will receive the same referential index.

Borer's account further requires that all empty categories be L-identified: that is, coindexed with one of a clearly defined set of "L-identifiers", antecedents with sufficiently rich i(=inflectional)-features. The notion of L-identification covers relations between clitics and syntactic positions coindexed with them; relations between members of an A-chain or Ā-chain, and relations between AGR in INFL and its L-subject (whether the latter is a lexical NP or an empty category in subject position).

In the Mundani CC, the empty category *pro* is the L-subject of the embedded AGR; but since AGR is anaphoric it lacks inherent features that will enable it to L-identify *pro* as required. When AGR is raised to Ic, however, it inherits features from its binding antecedent: namely, the subject NP in the matrix clause. It then transmits these features to *pro*, which results in the coindexation of *pro* with AGR, and also with the matrix subject. The requirement that *pro* be properly L-identified is thus met. The CC structure with coindexation is diagrammed in (22), where *e* is a null element. Note that the upper INFL/TENSE also participates in the coindexation, by virtue of its relation to its own L-subject ie. the subject NP of the matrix clause.

(22) NP_i $TENSE_i$ VP [Ic_i [*pro*$_i$ *e* VP]] ø]
IcP AgrP AGR Spec IcP

As an example we refer again to sentence (14a), repeated here as (23a).

(23)a. **Tà ø pàà atò ŋ̀- kpen asi.**
he PF push him R/SS-fall LOC:ground
He has pushed him and fallen down.

b. **Tà; ø; pàà atò**
TENSE

[ŋ̀-; [*pro*; *e* kpen asi]] ø]
IcP Ic AgrP AGR Spec IcP

In each CC the only overt realization of the embedded AGR in COMP will be an R/IR (or incompletive) morpheme. In (23b), it is the realis prefix ŋ̀-. The coindexation of this item with the matrix subject yields the "same-subject" function of R/IR (or incompletive) marking referred to in the earlier discussion of Switch Reference.

Finally, note that this account assumes that the verb in the consecutivized clause raises to AGR and then to COMP to acquire R/IR modal marking.

9.3 A Comparison between SR and Control Accounts

The analysis of subject Control effects presented here has much in common with Finer's account of SR, which for him is essentially subject-orientated. Both analyses involve the binding of a subordinate INFL/AGR by a superordinate INFL component, resulting (via slightly different mechanisms) in obligatory subject Control. The marked resemblance between the two approaches, and the fact that either one can be applied to the Mundani CC with some measure of success, lend support to the idea that Control effects and SR might eventually be brought together in a unified account.

9.3.1 Base-generation of R/IR Marking under INFL (AGR)

With respect to the Mundani CC, however, an analysis based on Borer's notion of anaphoric AGR avoids several weaknesses of the SR approach.

Firstly, it allows us to say that R/IR marking is base-generated under the anaphoric INFL/AGR and moved to COMP at S-structure. Here it assumes additional functions as a "same-subject" marker and as a marker of this particular subordinate clause type. It seems more plausible that modal markers of this kind *should* have

their origin in INFL, rather than being base-generated directly in COMP, as in Finer's analysis.

9.3.2 The COMP/INFL/AGR Constituent Abandoned

Secondly, Borer's account enables us to dispense with Finer's rather unwieldy discontinuous COMP/INFL/AGR constituent. The same results are achieved by distinguishing between two INFL-type constituents - TENSE and AGR, by the raising of the item under anaphoric AGR to COMP, and by the consequent L-identification of *pro* in subject position.

9.3.3 Complementizers and Conjunctions

As with Finer's analysis, the question arises as to the position occupied by the subset of conjunctions **tê/ká/kà** which co-occur with R/IR marking (see 8.4.3 and 9.1.4 for previous discussion of these forms). Clearly, if the head COMP is to serve as a landing site for the R/IR morpheme, it cannot at the same time accommodate a conjunction of this type. Also, if [Spec,CP] is in clause-final position, it is likewise unavailable to tê/ká/kà. Note further that these conjunctions never co-occur with "ordinary" complementizers in C, such as **nê**, *that* or **ǹdɨ**, *how*.

A possible solution is to assign the **tê/ká/kà** subset of conjunctions to a higher CP (or, in Borer's terms, IcP) adjunction position. Such adjunction is entirely straightforward in this account, since COMP (or Ic) does not form a complex constituent with INFL/AGR, as in the structure proposed by Finer. **Tê/ká/kà** would then subcategorize for an IcP complement with [+anaphoric] AGR and with SS marking raised to head of IcP. The structure of a sentence such as (23c), section 8.4.3, repeated here as (24a), would then be as in (24b). A complement clause with [-anaphoric] TENSE and with **nê** or **ǹdɨ** in the head Ic position, would be ruled out by subcategorization restrictions (24c).

(24)a. **Ñ -de gha a ntɔ' Fǫ̀**
I -P3 go LOC palace (of) chief

kà ē- ye atò.
without IR/SS-see him

I went to the chief's palace, but did not see him. (Lit:...without seeing him.)

b. **Ñ$_i$ de$_i$ gha a ntɔ' Fǫ̀**

[kà [ē-$_i$ [*pro*$_i$ e ye atò]] ø]
IcP IcP Ic AgrP AGR Spec IcP

c. ***Ñ$_i$ de$_i$ gha a ntɔ' Fǫ̀**

[kà [nê [mâ$_i$ ø ye atò]]] ø]
IcP IcP Ic AgrP TENSE Spec IcP

Observe also that when the head Ic position is already occupied by a complementizer, movement of anaphoric AGR to Ic is blocked. For this reason, the presence of a non-null element in Ic implies non-anaphoric TENSE in the embedded clause (25a); a clause with an overt complementizer plus anaphoric AGR is ruled out (25b).

(25)a. **Tà$_i$ ø su am nê yè$_i$-lè lɔ̂' ŋ̀-gà.**
He PF tell me that he$_i$-P3 P1 R-go
He$_i$ told me that he went (after doing something else).

Tà$_i$ ø$_i$ su am [nê [yè$_i$ lè lɔ̀' ŋ̀-gà]] ø]
IcP Ic AgrP TENSE Spec IcP
[-A]

b.***Tà$_i$ ø$_i$ su am [nê [*pro*$_i$ ŋ̀-$_i$ gà]] ø]**
IcP Ic AgrP AGR Spec IcP
[+A]

In other words, Borer's analysis involves a crucial correlation between an empty COMP (Ic) node and obligatory subject Control that is supported by the facts in Mundani.

9.3.4 Control Effects in Non-subject Positions

In Borer's system, the unique relation between AGR in INFL and its L-subject has a direct consequence: that Control effects occur *only* in subject position. This account fits the Mundani data precisely. Where other languages, eg. English, show evidence of Control effects involving non-subject positions, Borer maintains that the Control can still be explained in terms of Binding Theory. She proposes that whereas referential coindexation may apply

both at S-structure and at LF, the binding conditions as such apply only at LF. For example, in (26a) the controller is the benefactive "for everyone", which clearly does not c-command *pro* at S-structure:

(26)a. [*pro*$_i$ to fail an exam] is possible for everyone$_i$

If the binding relations are read off the LF structure (26b), however, where the sentential subject appears post-verbally, then the necessary c-command relations can be established, the benefactive binds AGR, and AGR L-identifies *pro* as required.

(26)b. **(It) is possible for everyone**$_i$ [*pro*$_i$ to fail an exam]

By arguments such as these, Borer seeks to preserve the universal applicability of her analysis. Finer's account of SR phenomena, on the other hand, simply does not work for SR systems involving non-subject NPs.

9.3.5 Distribution of Null and Non-null Subjects

A final reason for favouring Borer's analysis is that it provides a unified account of the distribution and reference assignment of null and non-null subjects in Mundani. Under this approach, a tenseless (non-finite) complement clause will necessarily contain anaphoric AGR. Since anaphoric AGR has no inherent set of L-features, it can function as an L-identifier of a null subject element just in case it is bound by an antecedent containing the necessary set of L-features. Anaphoric AGR inherits the L-features of its binder, and can then license the null element in its own subject position. In contrast, a Mundani tensed (finite) clause will (I suggest) contain no AGR constituent at all, and thus will have no inherent or inherited L-features. So it will be unable to L-identify a *pro*, and its subject position must be filled by a lexical NP. Here I diverge slightly from Borer, who would say that in English, for example, tensed INFL includes a *non*-anaphoric AGR component that does have some inherent L-features; but these features are less "rich" than those inherited by its anaphoric counterpart, and therefore insufficient to L-identify a *pro* in its own subject position. At this stage in our research, there seems to be no independent evidence for an AGR component in a tensed clause in Mundani (although embedded tensed clauses need further investigation). In short, Mundani TENSE and

AGR are two distinct entities (whether under a "split-INFL" or "TP-AgrP" analysis): one of these entities has no L-features; the other inherits L-features from an antecedent. This state of affairs avoids the need to resort to the graded notion of a "sufficiently rich" set of L-features - a notion that lacks clear definition in Borer's analysis.

9.4 R/IR Modal Marking in Different Syntactic Configurations

In the preceding sections, it was demonstrated that a control analysis of R/IR (and incompletive) marking in the CC yields good results, providing a principled explanation of the different functions of these morphemes in terms of a system of modal oppositions, anaphoric "same subject" relations, and the marking of a particular type of non-finite subordinate clause.

As already noted, however, R/IR marking appears in other configurations: namely, in Auxiliary Series under finite INFL, and in Serial Verb Constructions (SVCs). We shall take a brief look at these two structures in relation to the CC, and ask if there are any possibilities for a coherent account of R/IR morphology across the three construction types.

9.4.1 The Auxiliary Series

As seen in 7.2, an auxiliary series under what we referred to initially as "finite INFL", is best analysed as a series of "verb-like" elements, each of which heads its own AuxP projection, As in other verbal sequences, each non-initial AUX in a series, along with the following main verb, will carry a realis or irrealis prefix (no incompletive marking is found in auxiliary series):

(27)a. Realis Marking

Tà-à ghɨ́ ǹ-dɔ̀' ǹ-dzə̀
he-P2 P1 R-P1 R-leave
He did (ghɨ́) leave yesterday (-à),
after something else had happened (ǹdɔ̀').

b. Irrealis Marking

Ta-a ghɨ̌ ē- lɔ̀'ɔ ē- sà'a ē- dzə̌
he-F F1 IR-F1 IR-F2 IR-leave
He will (ghɨ̌) leave tomorrow (esà'a),
after something else has happened (elɔ̀'ɔ).

In contrast to its multiple functions in the CC, the R/IR prefix in sentences such as (27a/b) has virtually no role in terms of marking modal oppositions; it clearly cannot mark "same-subject", since the auxiliary has no argument structure and hence no external argument (subject) position; and it can no longer signal a particular subordinate clause type, since AuxP is a constituent in a monoclausal structure. The only role left for R/IR marking is to reinforce the future vs. non-future tense distinction established by the T/A indicator under the head T of TP (see the discussion in 7.3.1): that is, the R/IR prefix takes certain (broad) tense features under T and "copies" them onto subsequent verbal elements.

This limited function of R/IR marking within the tense system prompts a consideration of an analysis in terms of licensing conditions on verbal elements. Fabb (1984) and Drijkoningen (1989) discuss the possibility that INFL (TENSE under our analysis) may be marked to assign "verbal case" to VP, which then percolates down to V. The "case-marking" is realized overtly in the form of a verbal affix, and the affix licenses the verbal form concerned. This kind of approach may offer some hope for a syntactic account of R/IR marking (and also imperfective marking?) in an auxiliary sequence. However, it leaves many unanswered questions: for example, why is the *initial* AUX in a series never licensed by an R/IR affix? Also, it may prove impossible to reconcile such an account with the analysis of auxiliary sequences adopted in 7.2, where the various nodes are licensed through the discharge of positions in theta grids, rather than through any notion of "case-marking".

9.4.2 The Serial Verb Construction (SVC)

The SVC was introduced in section 8.2.2; sentences (4) and (5) from that section are repeated here as (28) and (29).

(i) Complex Series where two verbs together yield a single idiomatic meaning.

(28)a. **Tà ø nu mèleb m̀-pfə**
he PF drink water R-die
He has drowned.
(He has drunk water and died.)

b. **Tà-lè nɨŋ ŋkɔ̀' yu ǹ-kɨ̀'ɨ̂**
he-P3 take chicken DEF R-come
He brought the chicken.

c. **Tà-lè nɨŋ ŋkɔ̀' yu ŋ̀-gà awen**
he-P3 take chicken DEF R-go LOC:market
He took the chicken to market.

(ii) Modificatory Series where one verb in the pair (underlined) modifies the other, contributing an adverbial or comparative sense.

(29)a. **Bɔ -ɔ̀ ǹ-tsèk-â ŋ̀-kɨ̀' -â**
they-IMP R-stay-IMP R-come-IMP
They are always coming/They come regularly.

b. **Tà ø kô àmə yu ǹ-tsè am**
he PF know matter DEF R-surpass me
He knows more than me about the matter.

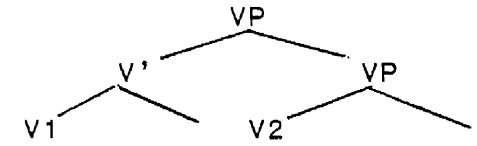
The SVC is formally identical with the CC in that it comprises a series of verbs sharing a common subject and tense-aspect specification; the subject is expressed overtly only before the initial verb in the series; a non-initial verb will carry R/IR morphology.[4]

As noted in 8.2.2, however, the SVC has a number of characteristics that distinguish it from the CC. For example, it consists of two verbs only; reordering of these verbs is disallowed; VP expansion by the addition of NP complements or adverbials is strictly limited; in some instances, the actual lexical items appearing as the NP complement are predetermined (in (28a), for instance, **mèleb** cannot be replaced by any other expression); the two verbs are interpreted either compositionally (28) or as a main verb plus modifier (29), although even with a compositional interpretation it is generally possible to identify one verb as having greater semantic prominence.

These characteristics suggest that the multiclausal structure assigned to the CC is inappropriate to the SVC, where the units are intuitively felt to be more tightly bound together. In view of the possibilites (albeit restricted) for inserting NP complements and adverbials, the linked units that compose the SVC must have V' status

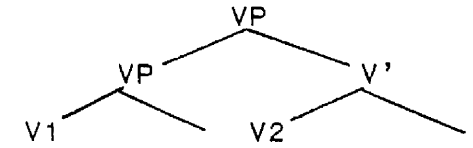
at the very least. Suppose that the structure is monoclausal, involving the adjoining of one VP projection to another. Since the process is one of adjunction and not of coordination, the structure is not completely symmetrical, and it is possible to identify the verb that is intuitively perceived to denote the key event. This V is the head of the entire VP, while the other VP is regarded as some kind of modifier (Déchaine 1990).

(30)a. Adjunction of V2 to V1



head modifier

b. Adjunction of V1 to V2

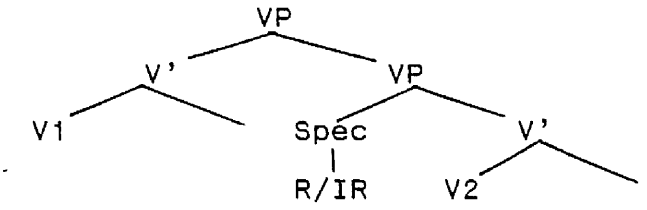


modifier head

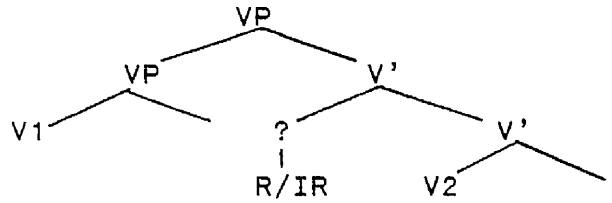
In (30a), V1 is the head of the overall structure, exemplified in (29b), where V1 kô, *knows*, denotes the central event. (30a) represents the more common type of serial construction in Mundani, illustrated in (28a/b/c) and (29a), where V2 expresses the central event, and is the head of the verbal structure.

How does R/IR morphology fit into these configurations? We must assume something like the structures in (31a/b):

(31)a. Adjunction of V2 to V1



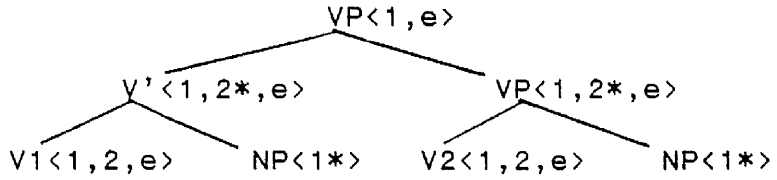
b. Adjunction of V1 to V2



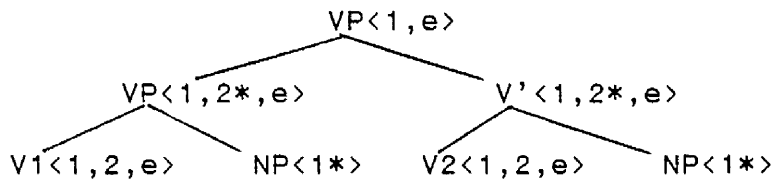
In (31a) the R/IR prefix falls under [Spec,VP]; in (31b) it is placed awkwardly in some kind of V' adjunction position. If (31a/b) represent base-generated adjunction of one verb projection to another, as Déchaine proposes, then R/IR marking is base-generated in two different positions in the two structures.[5] It would in any case be intuitively more satisfactory to base-generate modal indicators under some component of INFL, as proposed in section 9.2.

A further problem concerns the anaphoric "same-subject" role of R/IR marking which was identified in the CC (8.3). In an SVC where each verb has an NP complement, the mechanisms of theta discharge operate as shown below (the R/IR position is omitted for simplicity at this stage).

(32)a.



b.



In (32a/b), the theta grid of each verbal head percolates upwards to the immediately dominating node, where the internal argument position is satisfied by the process of discharge. At this level we now have VP and V' sisters with identical theta grids: each has an external argument position <1> and an event position <e> that remain to be satisfied. By a process of "double merger", the two empty argument positions and the two empty event positions are identified and merged, to yield a single external argument position and a single event position that are related to both sister constituents. The merger of the two event

positions captures the modificatory role that one verb plays in relation to the other, since merger is the process of theta discharge associated with modificatory structures (see (33), section 7.2). The identification and merger of the two external argument positions means that only one subject position [Spec,TP] is projected in the SVC: there is no empty category in a subject position needing to be L-identified and thus licensed by R/IR modal marking under AGR (9.2.4.3). In short, the R/IR prefix has no role to play as an indicator of "same subject", and there is yet another divergence from the account of R/IR marking adopted in the context of the CC.

If we persist in seeking a coherent account of R/IR marking across both SVC and CC, we are obliged to analyse the SVC as a series of two clausal constituents, a finite main clause followed by a non-finite embedded clause, following the pattern of the CC.

In support of such a unitary approach to the two constructions, the two verbs in sentences such as (28b/c) could be said to receive individual (rather than a compositional) interpretations, since the act of "taking" precedes the act of "coming/going" chronologically. In (28a), also, some speakers favour a non-compositional interpretation: *He drank water and (then) died.* Other examples of what we have termed the "Complex Series" in Mundani have the verb **nɨ**, *take*, as V1 (*take stick beat*, *take money give*, etc.), and might likewise be interpreted non-compositionally. As for the Modificatory Series, there is in principle no reason why, if we adopt a biclausal analysis along the lines of the CC, one clausal constituent should not modify another.

On the other hand, by assigning identical syntactic structures to the CC and the SVC, we are obliged in the case of the SVC to stipulate certain restrictions on VP expansion that do not apply to the CC. Also we have noted that the central event in a Mundani SVC is often expressed by V2: it seems intuitively improbable that the central event should be encoded in a subordinate clause while the modifying event is expressed by V1, in the matrix clause. This problem is especially acute in examples such as (29a), where V1 **ñtsèkâ** is interpreted as an adverbial modifying V2 **ŋ̀kɨ̀'â**. The asymmetrical configurations in (30) capture perfectly the relative prominence of V1 and V2 in such sentences.

Another reason for rejecting the biclausal approach to the SVC is the lack of evidence for the clausal status of the linked units. If we apply to the SVC the tests used in 8.4 to establish the clausal status of the units in the CC, we immediately encounter problems. For example, we can insert into the CC the conjunctions **tê**, *until*, **kâ**, *before* or **kà**, *without*, which take an IP (clausal) complement, thus demonstrating the clausal status of the following consecutivized unit; but if we try to do the same in the SVC the result is either ungrammatical (33), or transforms the serial construction into a CC with a totally different, non-compositional, interpretation (34).

(33)a. **Bɔ -ɔ̀ ǹ-tsèk-â ŋ̀-kɨ̀' -â**
they-IMP R-stay-IMP R-come-IMP
They are always coming/They come regularly.

b. ***Bɔ-ɔ̀ ǹ-tsèk-â tê ŋ̀-kɨ̀'-â**
**They are remaining until coming.*

(34)a. **Tà-lè nɨŋ ŋ̀kɔ̀' yu ŋ̀-gà awen**
he-P3 take chicken DEF R-go LOC:market
He took the chicken to market.

b. **Tà-lè nɨŋ ŋ̀kɔ̀' yu tê ŋ̀-gà awen**
he-P3 take chicken DEF until R-go LOC:market
He took the chicken (and kept it)
until he went to market.

In conclusion, the weight of evidence favours an approach to the SVC that is distinct from that adopted for the CC, and that posits the underlying structures diagrammed in (30). If this V' adjunction analysis is pursued, however, and the R/IR prefix is incorporated into V2, we are left with a similar set of problems to those posed by the Auxiliary Series: namely, how to account for the R/IR prefix in the syntax, and how to give some coherence to the overall picture of R/IR marking as it occurs across different construction types.

9.5 Summary

We have shown that in the Mundani CC, the system of R/IR marking has certain properties that make it amenable to analysis either as part of a Switch Reference system, or as part of a system of Control. Specifically, the R/IR morphemes involve the notion of "same subject" or obligatory subject Control. Under either an SR or a Control approach, this notion involves in turn the binding of a subordinate INFL/AGR by a superordinate INFL

component. It also requires that the R/IR "same subject" marker should occupy COMP, at least at S-structure.

The Mundani data give us some insights into the nature and extent of the parallelism between SR and Control systems. The basic resemblance seems to lie in a binding relationship between two INFL components, in the links existing between INFL, its Spec (subject) position and COMP, and in the obligatory subject Control that is a consequence of these various relationships. These are the basics of both SR and Control; but clearly more work is needed on, for example, SR and Control systems that involve non-subject positions and/or coordination structures, to see how these fit into the overall picture.

Despite their similarities, SR and Control analyses differ considerably in the way they account for the nature of the syntactic relations holding in the Mundani CC. Finer's SR account sets up a complex discontinuous COMP/INFL/AGR constituent, stipulates that "same subject" marking be base-generated in COMP, and in other respects uses standard Binding Theory. Borer's Control analysis, on the other hand, distinguishes between anaphoric and non-anaphoric INFL components, requires that "same subject" marking be base-generated in anaphoric AGR in INFL and moved to COMP only at S-structure, and introduces the notion of L-identification to license the null element *pro* in subject position of the controlled clause.

In 9.4, the scope of the discussion has been be widened to include not only the CC, but also other configurations where R/IR morphology occurs: namely, the Serial Verb Construction and the Auxiliary Series. These constructions differ syntactically both from each other and from the CC, and the functions of R/IR morphemes are different in each, making it difficult to arrive at a unified account of R/IR marking across the language as a whole.

CHAPTER 10 - "INFL": A COMPLEX OF DIFFERENT FUNCTIONAL CATEGORIES

In preceding chapters we have described the assortment of tense-aspect-modal elements that might be said to compose an inflectional (INFL) constituent in the Mundani language, and have opened up various possibilities for a syntactic analysis of these elements.

A fundamental distinction is made between finite and non-finite INFL, on the basis of their differences of distribution, content and feature specification. The two are in complementary distribution: finite INFL occurs in matrix or embedded clauses with an overt subject; non-finite INFL occurs only in embedded clauses with no overt subject. The content of the two INFL types is also discrete: finite INFL is either simple (composed of a single item) or complex (consisting of several items), and its contents are selected from a closed class of TAM indicators that include clitics, particles and auxiliaries; non-finite INFL is simple, and is normally confined to a realis/irrealis marker only, with the optional addition of the phonologically unrealized aspectual feature [+imperfective]. In terms of features, we argue that finite INFL is specified as [+TENSE,-AGR], while non-finite INFL is specified as [-TENSE], but has the feature [+AGR] derived from its function as an anaphoric "same-subject" marker.

The differences outlined above suggest two possible approaches to analysis: either a "split-INFL" approach, or an analysis in terms of two separate syntactic categories, TENSE and AGREEMENT (T and AGR), projecting to TP and AgrP respectively. The latter option is preferred not so much on theoretical grounds as for clarity of exposition.

The possibility is considered of further subdividing TP into separate TENSE and ASPECT functional categories, on the strength of certain distributional and agreement properties of imperfective marking. However, the evidence in favour of a separate treatment of aspect is insufficiently clear-cut. The analysis of "complex TENSE" therefore proceeds rather on the basis of a distinction between, on the one hand, clitics or particles that fall under the head T of TP, and, on the other, auxiliaries ("verb-like" items), each of which heads its own AuxP projection.

To summarize: the evidence from Mundani leads us to conclude, with Pollock (1989) and others, that INFL is not a single functional category, but rather a complex of different kinds of functional category, each of which forms the head X of its own XP projection.

In terms of analyses, the collection of categories forming what is referred to initially as "finite INFL" or "complex TENSE", is accounted for satisfactorily in terms of the discharge of positions within theta grids, following Higginbotham (1985) and Speas (1990). This approach enables us to account in a principled way for the differing status of the head T and AUX heads, for their interdependence, for their compositional interpretation, and, at least partially, for their linear arrangement within complex structures. Questions that remain partially unresolved, and that invite further research, include the "spreading" of imperfective agreement marking across auxiliary series with a following main verb.

The analysis of non-finite INFL or AGR can be approached in two ways: in terms of a system of Switch Reference (SR) marking, following Finer (1985), or in terms of the version of Control Theory developed by Borer (1989). It is our contention that the latter provides a more satisfactory account on both theoretical and empirical grounds. It avoids some of the theoretical problems inherent in Finer's SR analysis, and some of his (mistaken) assumptions about SR languages; it also offers a more comprehensive account of the Mundani data, including clauses marked with a particular subset of conjunctions, and the distribution and reference assignment of null and non-null subjects in the language. Once again, certain matters remain only partially resolved. Specifically, it would be interesting to investigate further the occurrences of R/IR modal marking across the different kinds of verbal sequence in which it occurs, and to try to harmonize the various syntactic analyses involved, with the aim of offering a more coherent account of R/IR morphology in the language as a whole.

Chapter 3

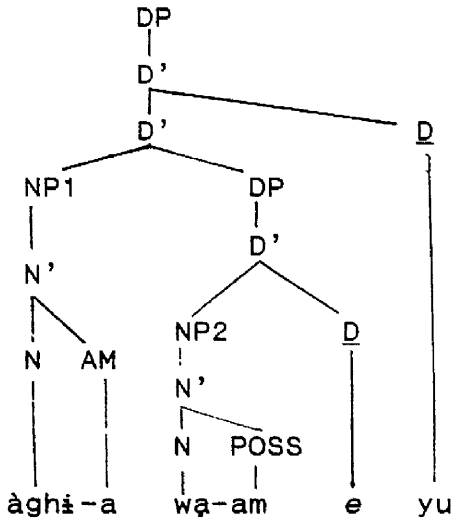
1 In contrast, the form **Bɔ̀ le ŋa ekab ewê**, *They gave (you) your money*, is entirely acceptable. Here **ewê** is not NP2, but the class 3 second person singular possessive pronoun.

2 Some eg. Fukui and Speas (1987) would claim that D selects N' rather than NP.

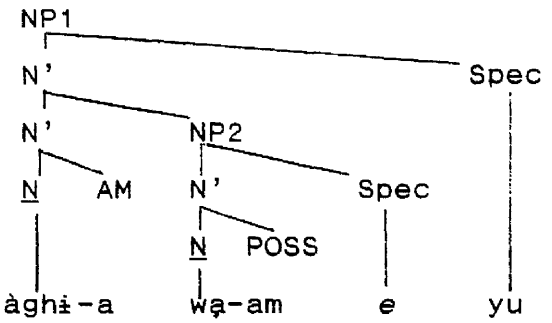
3 Associative (genitival) constructions in Mundani do not shed much light on the relative advantages of DP and NP analyses. The associative construction is schematized as follows: [NP1:AM [NP2] (Det of NP1)], where NP1 is the possessed entity; AM is the Associative Marker encliticized onto NP1 and agreeing with NP1 in noun class; NP2 is the possessor, followed optionally by an NP1 determiner. An example is seen in (i); the corresponding structures under DP and NP analyses are compared in (ii) and (iii).

(i) **[àghɨ -a [wạ -am] yu]**
NP1 thing-AM NP2 child-my DEF
c7 c7 c7
that thing of my child

(ii) DP analysis



(iii) NP analysis



With both accounts it is possible to show how NP2 is embedded in NP1, and to handle the Associative Marker -a and the Possessive modifier -am in the same way, as sister to the modified noun (a desirable result). One advantage of the NP analysis is that the noun class concord between the head of NP1 **àghɨ** and its determiner **yu** is explained straightforwardly in terms of Spec-Head agreement - an explanation that is not available under a DP analysis. Note that in (iii), [Spec,NP] follows rather than precedes the phrasal head N; we shall later argue that [Spec,CP] likewise follows rather than precedes its head C.

4 This wh-word has two forms: **eghà** (the citation form) in postverbal object position, and **eghã** in preverbal subject position. The origin of the high tone forming a L̂H glide in subject position is not known.

5 Note the root-initial consonant alternations following a nasal consonant: gh → g, l → d. Most of the nominalized forms with a homorganic nasal prefix functioning as nominalizer occur in gender 9/10 (Parker 1989).

Chapter 4

1 There is a logophoric/non-logophoric distinction in the system of third person singular subject pronouns in **nê/ndɨ** complement clauses. However, in this case it is the matrix verb of speaking, thinking, feeling, etc., and the reportive context which this verb creates, which are the determining factors for the use of logophoric pronouns - not the embedded clause type per se.

2 On the other hand, the overlay L-H pattern neutralizes the distinctions between Imperfective and Future pronominal forms.

3 Parallel to the function of **nê** (with H̄L tone) as a compound marker linking two CP constituents, is the function of **nè** (with L tone) as a compound marker linking two NPs eg. **abə nè nə'**, *dog and porcupine*. Despite the difference in tone, we can speculate that the two markers may have a common origin.

4 The nasal realis prefix has a variant form **è-** (or **ø-**) occurring before a stem-initial nasal or voiceless fricative consonant.

5 The use of the incompletive marker **me-** in place of realis/irrealis marking in consecutivized clauses is discussed in 8.3.2.

6 These properties do not *define* Passive constructions, since they are found in other construction types also; but they are necessary properties of Passives.

Chapter 5

1 The incompletive marker **mé-** also appears in non-finite INFL: see 8.3.2 for details. In addition, non-finite gerundive clauses are introduced by the particle **-á**, which may be another candidate for the non-finite INFL constituent. This particle could plausibly be analysed as either (i) the class 1 object marker, or (ii) the locative marker. The latter seems more probable on cross-linguistic grounds. Gerundive clauses are not included in this study, and await further research.

Chapter 6

1 High tone verbs of Subclass 3, according to the verb classification established in Parker 1985a. Since the Narrative Tense is signalled by low tone, it will not show up on Subclass 3 verbs that already have a low-tone root.

2 Some speakers question the habitual reading for "present" imperfectives.

3 The imperfective suffix **-a** is normally deleted in this construction, for reasons that are not understood at present.

4 The imperfective suffix **-a** undergoes shortening or deletion following the root-final vowel **a** in **kua**.

5 In past tenses, the concessive notion is not encoded by **màà** - nor indeed by a condition-consequence sentence at all. Instead, the concessive meaning is conveyed by means of two coordinated clauses in a contrastive relationship, linked by **ka**, *but*:

Tà-à tụ wạ wu tesi ka Manyi ka ye atò.
he-P2 send child DEF yesterday but Manyi NEG see him
(i) He sent the child yesterday, but Manyi did not see him.
(ii) Even if he sent the child yesterday, Manyi did not see him.

6 (58) has an alternative reading in which **eli** functions as an F3 tense marker and *not* as a lexical verb.

7 The imperfective suffix **-a** harmonizes with the root vowel **ɔ** across a glottal stop (ie. it becomes an echo vowel).

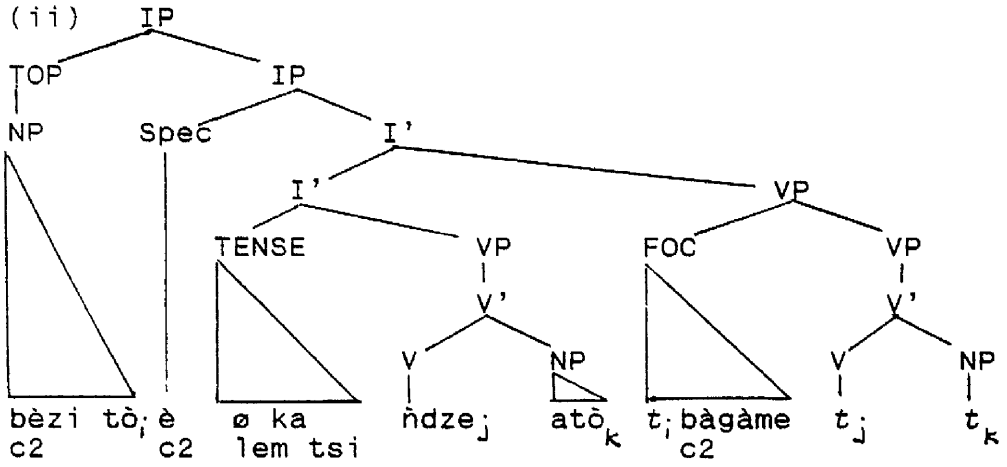
Chapter 7

1 Taking sentence (i) as an example, the structure is roughly as in (ii), where the NP with a nominal head occupies the TOPIC position, and the "normal" subject [Spec,IP] position is filled by a pronoun form that carries the low tone obligational marking.

(i) **[Bèzi tò] è ø ka lem**
TOP wives:c2 his they:c2 OBL NEG not:even

tsi ñ-dze atò bàgàme
any:more R-see him all:c2
None of his wives should/may even see him any more.

(ii)



In this example, the quantifier **bàgàme**, agreeing in noun class with the topicalized NP **bèzi tò**, provides evidence that the TOPIC NP has been raised out of the FOCUS position - yet another indication of the interdependence of FOCUS and TOPIC noted in chapter 4. It is an open question whether the "actor" NP of an obligational clause is *always* raised out of the FOCUS position, or whether it could equally be raised out of [Spec,IP].

2 Insufficient study has been carried out to be able to distinguish between primary and secondary stress at this stage.

3 The consonant deletion is dealt with in section 7.1.1.4.

4 The lowering of the high tone to mid on this vowel is discussed in 7.1.1.3.

5 There is optional loss of vowel length in this form; but note that the tone sequence L+H remains intact, forming a L͡H glide.

6 The marker **-á** in initial position in a non-finite, gerundive clause could plausibly be identified as (i) the class 1 object marker **á**, or (ii) the locative marker **á**. The latter seems more likely on cross-linguistic grounds (see 4.1.2.2).

7 The low tone prefix **è-** is a variant form of realis **Ǹ-** occurring before a voiceless fricative or nasal consonant.

8 There are root-initial consonant alternations l→d and gh→g following a nasal consonant.

9 Concessive **màà** always triggers *realis* marking on a following verb, even in future tenses. This fact is evidence of the independence of R/IR marking from the tense system, even though realis marking will normally be associated with past tenses and irrealis with future tenses.

10 The imperfective suffix **-a** harmonizes with the root vowel **ɔ** following a glottal stop ie. it becomes an echo vowel.

11 For simplicity, the incompletive verb prefix **mé-** is left aside for the moment, as are other TAM markers that are attached to, or incorporated into, the verb.

12 The two contrasting kinds of LCS are seen in (i) and (ii), where the examples used are **big** (the lexical head of AP) and **-ed** (the non-lexical head of IP) in English.

(i) Lexical Head

big [+V,+N]: <1>
|
x's size is large with respect to property p

(ii) Non-lexical Head

-ed: <e>
|
-ED such that p(x)

13 In Parker 1991:185-187, we suggest that these three morphemes - imperfective **-a**, hypothetical **-ā** and general future **-á** - may have a common historical

source. The assumption is that the perfective-imperfective opposition is historically the fundamental one in the language, on which a complex tense system is in process of being imposed. If this scenario is correct, we can suppose that imperfective -a has extended its function to become, in addition, a hypothetical modal marker in conditional sentences, and also a marker of general future. This suggestion seems plausible on semantic grounds, even if, synchronically, the three markers have "grown apart" and exhibit certain differences eg. in tonal properties and syntactic behaviour.

There is a difference in tonal properties between the imperfective inflectional suffix on the one hand, and hypothetical and general future markers on the other. Whereas the hypothetical and general future morphemes retain their inherent high tone, regardless of their host, the tone of the imperfective suffix is determined by the overall tone pattern of the verb stem to which it is attached. This property results in a variety of surface tones on the suffix: for instance, the imperfective form **ǹdà'-à** has a low tone suffix; **ŋ̀kɨ́'-a̋** has a HL glide on the suffix; **ǹdī-ā** has a high tone inflectional suffix. We discuss each of these tones briefly below, and demonstrate that it is impossible to determine from them the underlying tone of the imperfective suffix.

ǹdà'-à: Either the inherent low tone of the verb root **là'** has spread rightwards by low tone spreading onto the inflectional suffix, or the inflectional suffix itself has an inherent low tone.

ŋ̀kɨ́'-â: The verb root **kɨ́'** has an inherent high tone. Low tone spreading displaces this high root tone rightwards onto the inflectional suffix to form a HL glide. In this instance, the final low tone could be the inherent suffix tone.

ǹdī-á: The verb root lí has an inherent high tone that is displaced rightwards onto the inflectional suffix by low tone spreading. If the inflectional suffix *does* have an inherent low tone, as suggested above, one would expect this low tone to combine with the displaced high to form a HL glide; but the absence of such a glide throws open once again the whole question of the underlying suffix tone.

There is also a difference between the imperfective, hypothetical and general future morphemes in postverbal position, in terms of their separability from V. Whereas the imperfective suffix and the hypothetical marker cannot be separated from V, the general future marker is attached to the final element under VP - whether this is V or some other item.

These two properties - tone, and separability from V - are charted below:

	IMP	HYP	F
Inherent tone maintained	-	+	+
Separability from V	-	-	+

These data suggest that the three morphemes represent different stages of evolution towards the absorption of TAM marking within V. In the case of the imperfective suffix, the fact that it has lost both its inherent tone and its ability to function independently of V, indicates that the process of absorption is well advanced. In historical terms, the incorporation of the aspectual indicator within V results in less distinctive marking for imperfectivity, which is remedied by the "spreading" process referred to in 7.3.2. The hypothetical marker is also inseparable from V, but retains its distinctive tone: that is, the process of absorption is less complete than for imperfective marking, the distinctiveness of the modal marking is adequately maintained, and no compensatory preverbal marking is introduced. The general future marker in postverbal position likewise retains its inherent tone, and is actually separable from V in the surface structure. One can speculate that it may be subject to incorporation at some later stage of development.

Chapter 8

1 A non-idiomatic reading is also accepted by some speakers, but usually only if an adverbial modifies the verb *drink* eg. **Tà nu meleb ŋgbè yemɔ', m̀pfə,** *He drank water immediately and (then) died.*

2 The presence of realis marking on the *initial* verb in the series is confined to "present" imperfective forms. See the comment in section 8.5.2.

3 Examples of the co-occurrence of **mé-** with a lexical subject are seen in a subordinate (conditional) clause in (a) and in a main (obligational) clause in (b):

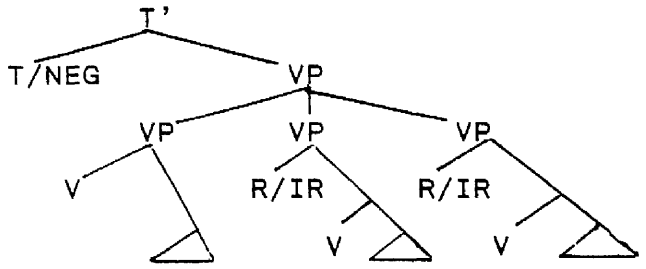
(a) **[A -a mé- ghă awen] à ø ko nê,**
you:s-F INC-go LOC:market you-PF know that

a -a fɨɨne èghɨ bê ègàme.
you-F sell things your all
If you are going to market (several times/over a period of time) you will sell all your things.

(b) **Bɨ ø mé- tseke wu nɔ̂ bɨtòba.**
you:p OBL INC-remain only together 2p + 3s
You should continue to remain united with him.

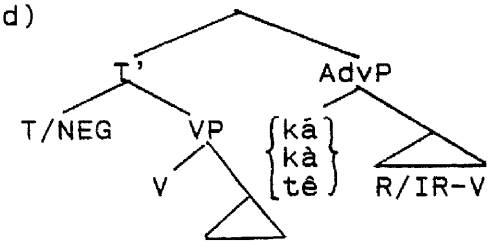
4 Indeed, taking into account the different NEG-scope possibilities, and assuming a split INFL analysis, one could even try to argue for a coordination structure of the kind seen in (c):

(c)

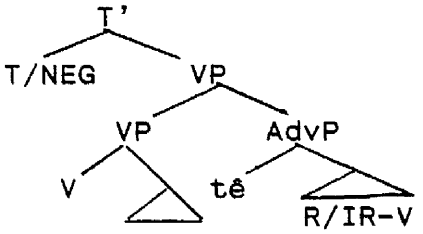


CCs that include an adverbial-type constituent introduced by **tê**, **ká** or **kà** would then have one of the two structures in (d) and (e), depending on whether NEG has narrow scope over the initial constituent only (d), or wide scope over all the units in the series (e).

(d)



(e)



However, this type of analysis seems less than satisfactory on several counts. It fails to shed any light on the absence of R/IR marking on the initial V in the sequence. In a clause-chaining subordination structure, the restriction of R/IR prefixes to non-initial verbs in the series is explained in terms of the syntactic functions of these prefixes as markers of "same-subject" and of a particular type of subordinate clause (8.3 and 8.4). In the VP coordination structure in (c), we could perhaps claim that the R/IR prefixes are markers of coordination; but in this case we would still have to stipulate that they do not appear in the initial coordinated unit. Also, since the R/IR markers would not be assigned a "same-subject" role, the interesting resemblances between this system of prefixes and canonical Switch Reference systems would not be addressed at all (see chapter 9). Finally, this alternative account of the CC does not fit the facts about adverbial frontshifting and NP extraction presented in sections 8.5.3 and 8.5.4, which furnish quite strong support for a subordination rather than a coordination structure.

Chapter 9

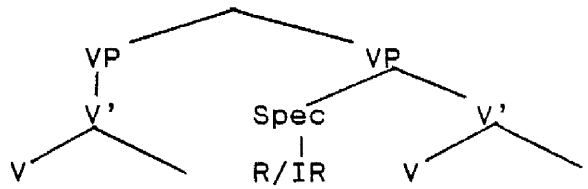
1 The question of whether the INFL in which SS marking is generated is a complete constituent in its own right, or merely a component part of a split INFL, is irrelevant to the discussion at this point. These two different analyses of INFL were introduced briefly in 5.3, and the question will be taken up again in detail in section 9.2.4.2.

2 It does not, of course, rule out the logical possibility of an overt coreferential subject in the lower clause. This possibility can be excluded by means of Case Theory (see 9.2) or by stipulating that the lower NP subject position is not spelled out in this particular construction.

3 We have argued in 3.1.4 that [Spec,CP] is in clause-final position, on the opposite side of INFL to COMP, in finite main and subordinate clauses. There seems to be no reason to suppose that non-finite consecutivized clauses should be different in this respect.

4 The presence of realis marking on the initial verb in the series is found in "present" imperfective forms as in (29). See the comment in section 8.5.2.

5 This problem could be avoided, of course, by adopting a single representation involving two coordinated VPs (Baker 1989:546), where the R/IR morpheme would occupy the specifier position of the second phrasal projection:



However, a symmetrical structure of this kind fails to distinguish the more prominent verb (the "head") from the verb which has a modifying function, and thus gives a less adequate account of the SVC - especially of the Modificatory Series.

APPENDIX I - NOUN CLASS SYSTEM

Nouns are grouped into classes according to the following criteria:

- nominal prefix (and, in a few cases, nominal suffix);
- consonant concord in the noun phrase;
- singularity or plurality.

Pairing of singular and plural forms is also taken into account.

Following these principles, nouns are divided into thirteen classes, which fall into eight genders: seven genders composed of two paired singular-plural classes, and one with a single class of "uncountable" (mass) nouns. Despite correspondences between certain genders and particular semantic fields, it is impossible at this stage in the development of the language to assign a precise semantic value to any given gender: that is, the system of classes and genders has become a purely grammatical phenomenon.

Table 1 presents the classification of nominals according to the criteria outlined above. The singular classes are listed on the left; the plural classes on the right. Under these two general headings, the first column to the left gives the number of the class, following the numbering system developed for Bantu languages; the second column gives the nominal prefix/suffix; the third column gives details of concord, which consists of a consonant and a tone (high or low). The lines linking the left and right sides of the table show the singular-plural pairings. The dotted lines indicate that the pairing of nominals in class 3 presents certain problems (for details, see Parker 1989).

Consonant concord turns up on most elements under NP: pronominals, definite and indefinite markers, possessives, demonstratives, numerals and other quantifiers, and associative (genitival) markers. Adjectives do not normally exhibit consonant concord. An example of consonant concord is seen in (i):

(i) **èka'à nɨ̱ ya yaa yebe**
lamp:c4 ADJ:big POSS:c4:my DEM:c4:this NUM:c4:two
these two big lamps of mine

Tonal concord is marked in associative (genitival) constructions of the forms shown in (ii) and (iii), where the associative marker will be characterized by a high or low tone according to the class of the possessed entity occupying the immediately preceding position. Low tone concord is found in classes 1, 6a and 9; high tone concord is found elsewhere. Sometimes, as a consequence of the application of phonological rules of consonant deletion and/or vowel elision, the distinctive tone of the associative marker may show up only on the following noun/pronoun denoting the possessor, as in (ii), where **bɔ̱**, *children*, has an inherent high tone but carries the low tone concord in the surface realisation.

(ii) N1 + AM + N2 **tàt** **ɛ̀** **bə̀** **bu**
father:c1 AM:c1 children:c2 DEF:c2

→ [tɛ̀: bə̀ bu]

the children's father

(iii) N + AM + POSS **àghɨ** **á** **wê**
thing:c7 AM:c7 POSS:c1:your:SG
your thing

TABLE 1 - NOUN CLASSES

SINGULAR			PLURAL		
class	px	concord	class	px/sx	concord
1a	ø-	w ˋ	2a	bè-	b ˊ
1b	ă-		2b	bá-	
3	è-	w ˊ	4	è-	y ˊ
5	è-	l ˊ	6	à-	y ˊ
			6a	mè-	m ˋ
				mà-	
7	à-	y ˊ	8	è-	b ˊ
9	ø-	y ˋ	10	ø- (-tsə̄)	t ˊ
	Ñ-			Ñ-	
19	kè-	f ˊ	13	tè-(-tsə̄)	t ˊ

The major genders are 1/2 7/8,
3/4 or 3/6a 9/10,
5/13 19/13

The minor genders are 5/6
6a.

APPENDIX II - THE VERB STEM

The following comments on verb stems are based on a preliminary study of verb forms in Parker 1985c.

1. Segmental and Tonal Variation

The shape of the verb stem changes according to the tense-aspect-modal specification under "complex INFL": that is, indicators of TAM categories appear not only under TENSE and AUX, and in a limited number of inflectional affixes attached to V, but also incorporated into the verb stem itself.

Examples of the different shapes that a given verb may adopt are set out in (1). The subclass of verb is indicated in the left-hand column. Subclass 1 is restricted to verbs with a monosyllabic stem carrying high tone. Subclasses 2 and 3 comprise verbs with a bisyllabic stem, but in subclass 2 the second stem syllable is absent in certain tenses/aspects. The chart gives an example of a high tone and a low tone verb for each of subclasses 2 and 3. Realis/irrealis and imperfective affixes are separated from the verb stem by a hyphen; the remaining stem form is underlined.

(1)

	Verb	"Present" IMP	"Present" PF	Past P3	Past P2/P	Past P1	Fut.
1	ēbí *to give birth*	m̀-bì-á	bí	bí	bí	m̀-bī	bí
2	ētémé *to shoot*	ǹ-tèm-á	tém	témé	tèmé	ǹ-tēm	témé
	ēdèbé *to slap*	ǹ-dèb-á	dêb	dêb	dèb	ǹ-dèb	dèbé
3	ēfété *to gather*	è-fèt-á	fétè	fétè	fètê	è-fètê	fété
	ēmà'á *to throw*	è-mà'-à	má'à	má'à	mà'à	è-mà'à	mà'á

Although it is impossible at this stage in the development of the language to align particular segmental or tonal characteristics of the verb stem with specific T/A categories, two general observations can be made about the forms in (1).

First, verbs of subclasses 2 and 3 (which account for some 90% of all verbs in the language) have a root of the form CVC, to which a suffix composed of a vowel only may be attached. The vowel frequently (but not always) reduplicates the root vowel. We shall call this vowel the "stem suffix": it has lost any semantic value it may once have had; but it can be isolated as a separate formative on the basis of unsuffixed forms such as **tém** and **dèb**,

which consist of a bare verb root. The stem suffix seems to be the relic of an incorporated form; but it is impossible to speculate what function this lost morpheme might have had in a system of aspectual or tense oppositions.

Secondly, tonal patterns suggest a tentative correlation between a low-tone stem suffix and non-future tenses on the one hand, and a high-tone stem suffix and future tenses on the other. However, high tone verbs of subclass 2 have a *high* tone stem suffix in past tenses eg. P3 **tém-é**; P2/P **tèm-é**, leaving the correlation incomplete.

2. Verbal Extensions

In addition to a root and stem suffix, some verb stems have a third formative or verbal extension, inserted between the root and stem suffix. Such an extension occurs only when a suffix is present (but many verbs have a suffix and no extension). The extension consists of one of the following consonsants: **-t-**, **-n-**, or (more rarely) **-l-** or **-ŋ-**. An example of a verb stem composed of all three formatives is diagrammed in (2).

(2) **(ē-)** **kō' -t-** **-é**
infinitival:px. root-extension-stem:sx.
= **eko'te**, *to cut several times/several items*

Certain semantic and syntactic functions can be assigned to verbal extensions in Mundani. For example, **-t-**, the most productive extension, may function as a pluralizer, as in (3a) where the item pluralized is shown on the right, or as a diminutive (3b).

(3)a. -t-: pluralizer

elà'a	*to speak*	
elà'te	*to speak a lot*	(event)
egha'a	*to open once/one item*	
egha'te	*to open several times/ several items*	(event/object)
edzàə	*to come or go out (one person)*	
edzà'te	*to come or go out (several people)*	(subject)

b. -t-: diminutive

eghène	*to walk, to travel*
eghète	*to stroll, to take a short walk*

Occasionally, **-t-** changes the valency of a given verb. In (3c) the valency change effected by the addition of the extension is shown on the right.

(3)c. -t-: valency change

elʊ̀ʊ̀	*to be hot*	(intrans)	
elʊ̀ʊ̀te	*to heat*	(trans)	1 > 2
elɔ̀ɔ	*to hide*	(trans)	
elɔ̀ɔ̀te	*to be hidden*	(intrans)	2 > 1

The extension -n- is frequently associated with stative meaning:

(4)a. -n-: stative

esąąna	*to be split*
esèmne	*to be slippery*
eghɨ̀ɨ̀ne	*to be foolish*
efə̀'ne	*to be mouldy* etc.

Sometimes, as a correlate of its stative function, -n- also changes the valency of a given verb (4b):

(4)b. -n-: valency change

esąą	*to split lengthwise*	
esąąna	*to be split*	2 > 1

In conclusion, the syntactic-semantic properties of verbal extensions have to do with valency and/or with semantic operations on events or arguments. From the evidence available so far, they do not appear to relate in any way to the system of TAM marking base-generated under "complex TENSE".

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